

**NATIONAL WEATHER SERVICE INSTRUCTION 10-922**  
**JULY 11, 2006**

**Operations and Services**  
**Hydrologic Services Program, NWSPD 10-9**

**WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS SPECIFICATION**

**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>

**OPR:** OS31 (T. Helble)

**Certified by:** OS3 (T. Graziano)

**Type of Issuance:** Routine.

**SUMMARY OF REVISIONS:** This directive supersedes NWS Instruction 10-922, dated December 8, 2004. The phased implementation of this directive will be as follows:

- ▶ Section 3 (Areal Flood Watch) became nationally effective on November 1, 2005.
- ▶ Sections 4 through 12, except for the **green text on VTEC**, become effective between January 31, 2006 and July 11, 2006 as each Weather Forecast Office operationally implements the OB 6 applications software.
- ▶ The **green text on VTEC** in sections 4 through 12 will become effective on dates to be announced in future service change notices.

The following is a summary of revisions made to the version dated December 8, 2004:

- 1) Specifies VTEC implementation and required product generation applications for the event-based hydrologic products listed in the table below:

Event-Based Hydrologic Product	AWIPS ID	Phenomena Code	Significance Code	Required Application
Areal Flood Watch	FFA	FA	A	GHG
Flash Flood Watch	FFA	FF	A	GHG
Flood Watch for Forecast Points	FFA	FL	A	RiverPro
Flash Flood Warning	FFW	FF	W	WarnGen
Flash Flood Statement	FFS	FF	W	WarnGen
Flood Warning for Forecast Points	FLW	FL	W	RiverPro
Flood Statement - Follow-up to	FLS	FL	W	RiverPro
Flood Warning for Forecast Points	FLW	FA	W	WarnGen
Areal Flood Warning	FLW	FA	W	WarnGen
Flood Statement - Follow-up to	FLS	FA	W	WarnGen
Areal Flood Warning	FLS	FA	W	WarnGen
Areal Advisories:				
• Urban and Small Stream Flood Advisory				
• Arroyo and Small Stream Flood Advisory				
• Small Stream Flood Advisory				
• Flood Advisory				
• Hydrologic Advisory				
Flood Advisory for Forecast Points	FLS	FL	Y	RiverPro

- 2) Describes the relationship between forecast confidence and the appropriate “Ready, Set, Go” product (outlook, watch, warning/advisory).
- 3) Allows for some overlap in the time frames for flood watches and hydrologic outlooks to place more emphasis on forecaster confidence in determining which product to issue.
- 4) Provides separate sections for areal flood watches (section 3) and flood watches for forecast points (section 4) to make a clear distinction between the two types of products.
- 5) Describes application of VTEC to flash flood warning extensions.
- 6) Specifies a bullet format for point-specific forecast information provided in flash flood warnings and flash flood statements.
- 7) Provides separate sections for flood warnings for forecast points (section 7) and areal flood warnings (section 9) to make it easier to find instructions on each type of product.
- 8) Provides separate sections for flood statements - follow-up to flood warning for forecast points (section 8) and flood statements - follow-up to areal flood warnings (section 10) and places each one immediately after their corresponding initial product.
- 9) Provides separate sections for flood statement - areal advisories (section 11) and flood statement - flood advisory for forecast points (section 12).
- 10) Specifies standardized formats for areal flood watches, flood watches for forecast points, flood warnings for forecast points, flood statements - follow-up to flood warnings for forecast points, areal flood warnings, flood statements - follow-up to areal flood warnings, flood statements - areal advisories, and flood statement - flood advisory for forecast points.
- 11) Provides instructions on how to extend areal flood warnings and areal flood advisories in time and how to cover new areas when a product has already been issued.
- 12) Provides for inclusion of segments describing forecast points which are below flood stage in flood warnings for forecast points and follow-up flood statements.
- 13) Requires standardized headlines in flood watch segments.
- 14) Requires latitude/longitude coordinates in areal flood warnings, flood statements - follow-up to areal flood warnings, and flood statements - areal advisories.
- 15) Specifies that call-to-action statements for event-based products should not include instructions on how to escape from vehicles caught in flood waters and instead, should emphasize the avoidance of flood dangers.

The following minor modifications were made to the version dated April 4, 2006:

- 1) Implements the new segmented/bulleted format (less VTEC) for products in Sections 4 through 12 when OB 6 becomes operational at WFOs between January 31, 2006 and July 11, 2006, and uses green to identify the text pertaining to VTEC which will be implemented later.

<u>(Signed)</u>	<u>January 25, 2006</u>
Dennis H. McCarthy	Date
Director, Office of Climate, Water, and Weather Services	

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1. Introduction. This directive describes hydrologic products issued by National Oceanic and Atmospheric Administration National Weather Service (NWS) weather forecast offices (WFO), guidelines for these products, detailed content descriptions as needed, and a generic format for each product type. Examples of products described in this directive are provided in NWS Instruction (NWSI) 10-923, *Weather Forecast Office Hydrologic Product Examples*.

1.1 NWS-Wide Product Standards. All WFO hydrologic products issued through NWS-supported dissemination systems follow certain identification and dissemination standards. Basic standards for text products, including those for World Meteorological Organization (WMO) headers, AWIPS identifiers, universal geographic codes (UGC), mass news dissemination (MND) header blocks, and product content are contained in NWSI 10-1701, *Text Product Formats and Codes*. Specific standards for UGCs are contained in NWSI 10-1702, *Universal Geographic Code (UGC)*. Specific standards for valid time event code (VTEC) are contained in NWSI 10-1703, *Valid Time Event Code (VTEC)*.

1.2 Multi-tiered, “Ready, Set, Go” Concept. NWS products follow the three-tiered, “Ready, Set, Go” concept to convey the severity and timing of a forecast hazard, and describe a level of forecaster confidence. For event-based hydrologic products issued by WFOs, the multi-tiered concept is described as follows:

- a. The hydrologic outlook (“Ready”) is used to indicate that a hazardous flooding event **may develop**. It is intended to provide information to those who need considerable lead time to prepare for an event.
- b. The flood watch (“Set”) is used when the expectation of a flood event **has increased, but its occurrence, location, and/or timing is still uncertain**. It is intended to provide enough lead time so those who need to set their mitigation plans in motion can do so.
- c. Flash flood warnings, flood warnings, and various advisories under the flood statement identifier (“Go”) are issued without regard to time frame, whenever an event **is occurring, imminent, or has a very high probability of occurrence**.

WFOs should strive to issue products in the outlook, watch, warning/advisory sequence as confidence increases of a flood event's occurrence. The specific combinations of lead time and forecaster confidence appropriate for a given product may be specified in regional supplements.

1.3 Counties, Boroughs, and Parishes. Wherever text or a generic product format refers to counties, the term "county" is also intended to represent the terms "borough," "parish," and "independent city," all of which exist in lieu of counties in some states. Not all geographic areas can be specified as a county or borough, so the phrase "INCLUDING THE FOLLOWING AREAS" may be used instead of "INCLUDING THE FOLLOWING COUNTIES" if necessary.

1.4 Event Tracking Numbers for Areal Products Covering Non-Adjacent Areas. When an areal hydrologic product is in effect for one or more contiguous zones/counties, and then a product with the same AWIPS identifier is issued for a geographically separated area, the second one should have a different VTEC event tracking number (ETN). However, ETNs generated by the approved product application should not be manually changed to follow this policy.

2. Hydrologic Outlook (ESF). There are two types of hydrologic outlooks: (1) products describing the possibility of flooding on a near-term forecast horizon, typically more than 24 hours from the event, and (2) products providing long-term forecast information such as water supply forecasts, updates on drought conditions, and probabilistic analyses.

2.1 Mission Connection. Hydrologic outlooks help the NWS meet its mission by providing long lead time information on the potential for flooding or other notable hydrologic events. This product gives users lead time to consider response options, execute mitigation activities, and plan reservoir operations, thus helping to protect life and property and enhance the national economy.

2.2 Issuance Guidelines.

2.2.1 Creation Software. Use the river product formatter (RiverPro) in the WFO hydrologic forecast system (WHFS), a text editor, or other applications as appropriate.

2.2.2 Issuance Criteria. A hydrologic outlook identifying the possibility of a flood event will be issued for the WFO's hydrologic service area (HSA - see NWSI 10-903, *Geographic Areas of Responsibility*) and should be issued when one of the following criteria is met:

- a. A product needs to be issued to convey the possibility of flooding, with possible occurrence typically 24 hours or more into the future, but as low as 12 hours in some cases when near-term certainty is still low, or
- b. A hydrologic outlook was previously issued indicating the possibility of flooding, but none materialized. In this case the new product issued under the ESF identifier would indicate there is no longer a possibility of flooding.

Hydrologic outlooks providing long-term forecast information will be issued for a WFO's HSA on an as-needed basis to provide long-term forecast information such as seasonal water supply forecasts, drought information, and probabilistic analyses.

2.2.3 Issuance Time. Hydrologic outlooks describing the possibility of a flood event are non-scheduled, event-driven products. Hydrologic outlooks providing long-term forecast information are issued on schedules coordinated with regional headquarters and local users.

2.2.4 Valid Time. A hydrologic outlook will be valid until a time/date specified in the product or until it is cancelled or updated by another hydrologic outlook.

2.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in Coordinated Universal Time, or UTC) varies with the time horizon covered in the product. For hydrologic outlooks describing the possibility of a flood event, the product expiration time may be 12 to 24 hours. For hydrologic outlooks providing long-term forecast information, the product expiration time may be as much as 30 days.

### 2.3 Technical Description.

2.3.1 UGC Type. County codes should be used (zone for Alaska).

2.3.2 MND Product Type Line. Use: "HYDROLOGIC OUTLOOK."

2.3.3 Content. Hydrologic outlooks are non-segmented, non-bulleted products written in a variety of formats tailored to their target audience. For hydrologic outlooks describing the possibility of a flood event, the following should be included:

- a. Headline defining the type of flooding being addressed (e.g., flash flooding, main stem river flooding, snow melt flooding),
- b. Area covered,
- c. Possible timing of the event,
- d. Relevant factors (e.g., synoptic conditions, quantitative precipitation forecasts (QPF), or soil conditions),
- e. Definition of an outlook (tailored to the specific situation).
- f. A closing statement indicating when additional information will be provided.

For hydrologic outlooks providing long-term forecast information, the following should be included:

- a. Headline defining the type of water supply, drought, or extended-range streamflow forecast information being provided and
- b. Clearly labeled forecast information presented in text and/or tabular format.

2.3.4 Format. The generic format is as follows:

FGA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB)	(WMO heading)
ESFxxx	(AWIPS identifier)
stC001-005>015-ddhhmm-	(UGC Type: county)
HYDROLOGIC OUTLOOK	(MND Product Type Line)
NATIONAL WEATHER SERVICE <WFO location>	(Issuing Office)
hhmm am/pm time_zone mon dd yyyy	(Issuance time/date)
(optional) <...Headline...>	
(optional) <Narrative forecast information>	
&& (optional - if narrative info needs to be separated from tabular info)	
(optional) <tabular observed, forecast, and/or probabilistic information>	
\$\$	
<(optional) forecaster name/number>	

**Figure 1.** Generic format for Hydrologic Outlook (ESF) product.

2.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

3. **Areal Flood Watch (FFA).** **VTEC Phenomena Code:** FA (for flood watch) or FF (for flash flood watch), and **Significance Code:** A. Areal flood watches inform the public of the possibility of flooding – typically within a 6 to 48 hour time frame before the event. Areal flood watches may cover states, counties, and portions of counties, states, or rivers (i.e., reach).

3.1 Mission Connection. Flood watches help the NWS meet its mission by providing advance notice and up-to-date information on the possibility of flooding. This allows users to begin monitoring hydrometeorological conditions more closely and elevate flood mitigation resources to a higher state of readiness, thus helping to protect life and property.

3.2 Issuance Guidelines.

3.2.1 Creation Software. Areal flood watches will be created with the Graphical Hazards Generator (GHG) application.

3.2.2 Issuance Criteria. Areal flood watches will be issued for a WFO's county warning area (CWA - see NWS Manual 10-507, *Public Geographic Areas of Responsibility*). Areal flood watches will be issued when one or more of the following conditions are met:

- a. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding within a 48-hour period; or
- b. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding more than 48 hours into the future and the forecaster determines that the flood watch is the best way to convey this possibility; or

- c. A dam or levee may fail and threaten lives or property, but the threat is not deemed to be imminent, or
- d. The effective time of a previously issued flood watch changes; and/or
- e. The geographic area covered by a previously issued flood watch increases; and/or
- f. An update to a previously issued flood watch is required; and/or
- g. A cancellation of all or part of a previously issued flood watch is required; and/or
- h. The expiration of a previously issued flood watch is to be announced (optional - if required by regional or local office policies).

3.2.3 Issuance Time. Areal flood watches are non-scheduled, event-driven products.

3.2.4 Valid Time. An areal flood watch will be valid until the time when the potential for flooding should end, as indicated in the headline, or until the product is cancelled or has expired.

3.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is generally set to be 6 to 8 hours after product issuance, but may be upwards of 12 to 24 hours for longer-fused potential flood situations. This time should be set to indicate when the next update will be issued, or, when approaching the end of the watch period, match the product valid time contained in the headline. When announcing expiration or cancellation of an areal flood watch, the product expiration time is not more than one half hour after the watch expiration or cancellation time.

### 3.3 Technical Description.

3.3.1 UGC Type. Zone codes should be used.

3.3.2 MND Broadcast Instruction Line. Use: “URGENT - IMMEDIATE BROADCAST REQUESTED” for initial product issuances as well as for extensions in time and/or expansions in area. Note: “BULLETIN” may be used in exceptional situations such as potential dam failures. See NWS Instruction 10-1701 for criteria on use of the terms “Urgent” and “Bulletin.”

3.3.3 MND Product Type Line. Use: “FLOOD WATCH.”

3.3.4 Content. The areal flood watch product uses a segmented, bullet format (bullets not used in cancellations/expiration). An optional general overview/synopsis section may be provided at the top of the product. The required segmented watch information section begins with the first UGC line followed immediately by primary and hydrologic VTEC (P-VTEC, H-VTEC) strings.

3.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following items:

- a. General Overview Headline - One or more headlines summarizing the flood threat, potentially affected area, and expected time of development. Each overview headline starts and ends with three periods “...” (ellipses).
- b. General Synopsis - a brief, non-technical description of the developing potential flood situation, including associated hydrometeorological factors when appropriate. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.”.

3.3.4.2 Segmented Watch Information Section. Information needed in a given areal flood watch product will be divided into one or more segments. If multiple segments are needed, they will be provided in the following order:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. New issuances (NEW)
- e. Extensions in both time and area (EXB)
- f. Expansions in area (EXA)
- g. Extensions in time (EXT)
- h. Continuations (CON)

Segments covering new issuances (NEW), extensions in both time and area (EXB), extensions in time (EXT), expansions in area (EXA), and continuations (CON) will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, zones/cities listing, and date/time stamp as shown in the generic example below. In the H-VTEC, only the immediate cause (ic) is entered - zeros are entered for the NWS location identifier (NWSLI), flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr).
- b. Headline briefly summarizing the segment content. For complete instructions on headline formats, see NWSI 10-1701, Appendix A. Some examples, along with the type of segment they would accompany, are as follows:
  - (1) ...FLOOD WATCH IN EFFECT THROUGH WEDNESDAY MORNING... (initial issuance when the watch starts now, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after initial issuance.)
  - (2) ...FLOOD WATCH IN EFFECT FROM 1 PM EST THIS AFTERNOON THROUGH WEDNESDAY EVENING... (initial issuance, with a specific time used for the start time and a general time phrase used for the ending time because the Event Begin Time is less than 12 hours from initial issuance and the Event Ending Time is more than 12 hours after initial issuance.)

- (3) ...FLOOD WATCH IN EFFECT FROM THIS EVENING THROUGH WEDNESDAY EVENING... (initial issuance, with general time phrases used for both the start and ending times because the Event Begin Time and Event Ending Time are both more than 12 hours after initial issuance.)
  - (4) ...FLOOD WATCH REMAINS IN EFFECT THROUGH WEDNESDAY EVENING... (continuation issuance, with a general time phrase used for the ending time because the Event Ending Time is more than 12 hours after initial issuance.)
  - (5) ...FLASH FLOOD WATCH IN EFFECT UNTIL 6 PM PST THIS EVENING... (initial issuance when the watch starts now, with a specific time used for the ending time because the Event Ending Time is less than 12 hours after initial issuance.)
  - (6) ...FLASH FLOOD WATCH IS CANCELLED...
- c. Action lead-in phrase such as “THE NATIONAL WEATHER SERVICE IN <name> HAS ISSUED A” (for NEW), “THE NATIONAL WEATHER SERVICE IN <name> HAS EXPANDED THE” (for EXA and EXB), “THE FLOOD WATCH IS NOW IN EFFECT FOR” (for EXT), or “THE FLASH FLOOD WATCH CONTINUES FOR” (for CON), followed by three to four bullets (asterisks \*), with the following information (bullets may be more than six lines):
- (1) First bullet - FLOOD or FLASH FLOOD, followed by WATCH FOR PORTIONS OF, followed by a general term describing the geographic area covered, followed by INCLUDING THE FOLLOWING, then a list of zones/counties covered. In CON and EXT segments, only provide the geographic area and zones/counties list.
  - (2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times (see Figure 2 for details).
  - (3) Third bullet - watch basis (e.g., synoptic conditions, soil conditions, river conditions, and quantitative precipitation forecasts).
  - (4) Fourth bullet (optional) - potential impacts (e.g., areas under flood threat).
- Basin- or point-specific information may be integrated into these bullets.
- d. Statement defining the meaning of a watch, including: “A flood watch (or flash flood watch) means that flooding is possible but not imminent in the watch area.”
- e. Call-to-action statement (optional). Call-to-action statements should focus on avoiding potential flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

- f. Optional tabular hydrologic observations and/or point-specific forecasts, with a double ampersand delimiter separating each different format for data presentation.

Segments announcing cancellation (CAN) or expiration (EXP) will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, zones listing, cities listing (optional), and date/time stamp as shown in Figure 2. In the H-VTEC, only immediate cause (ic) is entered - zeros are entered for the NWSLI, flood severity (s) and the start, crest, and end times; and OO (double capital "O") is entered for flood record (fr).
- b. Headline summarizing content of the segment.
- c. Sentence announcing cancellation or expiration of the product, followed by a brief post-event synopsis and summary of hydrologic activity.

3.3.5 Format. For an areal flood watch, follow the generic format shown below in Figure 2:

```
WGA1A2ii cccc ddhhmm (BBB)
FFAxxx
```

```
URGENT - IMMEDIATE BROADCAST REQUESTED 1
FLOOD WATCH
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional) ...General overview headline...>
```

```
<(optional) .General synopsis of potential flood situation (free format)>
```

*(Include one or more of the following segments in the indicated order:)*

*For corrections:*

```
stZ001-005>015-ddhhmm- (UGC-Z & expiration time)
/k.COR.cccc.pp 2.A.####.yyymmddThhnnZB-yyymmddThhnnZE/ (P-VTEC string)
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/ (H-VTEC string)
<zone #1>-<zone #2>-<zone #n>- (Zones listing)
INCLUDING <THE CITIES OF> location...location (Optional - city/location)
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>
```

```
$$
```

*or / and (for cancellations):*

```
stZ001-005>015-ddhhmm-
/k.CAN.cccc.pp 2.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IS CANCELLED...

THE <FLOOD or FLASH FLOOD> WATCH FOR <A> PORTION<S> OF <geographic area>3
HAS BEEN CANCELLED. <Brief post-synopsis of hydrometeorological activity>
```

```
$$
```



*or / and (for expirations):*

```
stZ001-005>015-ddhhmm-
/k.EXP.cccc.pp 2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IS NO LONGER IN EFFECT...

THE <FLOOD or FLASH FLOOD> WATCH FOR <A> PORTION<S> OF <geographic area> 3
HAS EXPIRED. <Brief post-synopsis of hydrometeorological activity>

$$
```

*or / and (for new issuances):*

```
stZ001-005>015-ddhhmm-
/k.NEW.cccc.pp 2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IN EFFECT <FROM <time/day phrase> 4 <TO or
THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A

* <FLOOD or FLASH FLOOD> WATCH FOR <A> <PORTION<S> OF> <geographic area> 3...
  INCLUDING THE FOLLOWING <COUNTIES or AREAS>...<(optional) IN <optional
  directional term> <state>...><zone #1>...<zone #2> AND <zone #n>. 5

* <FROM <time/day phrase> 4 <TO or THROUGH> <time/day phrase>> or UNTIL
  or THROUGH> <time/day phrase>.

* <hydrometeorological basis for the watch>

* (optional) <potential impacts>

<statement defining meaning of a watch>

<(optional) call-to-action statement>

$$
```

*or / and (for both expansions in area and extensions in time)<sup>6</sup>:*

```
stZ001-005>015-ddhhmm-
/k.EXB.cccc.pp 2.A.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IN EFFECT <FROM <time/day phrase> 4 <TO or
THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE

* <FLOOD or FLASH FLOOD> WATCH TO INCLUDE <A> <PORTION<S> OF> <geog. area> 3...
  INCLUDING THE FOLLOWING <COUNTIES or AREAS>...<(optional) IN <optional
  directional term> <state>...><zone #1>...<zone #2> AND <zone #n>. 5

* <FROM <time/day phrase> 4 <TO or THROUGH> <time/day phrase>> or
  <UNTIL or THROUGH> <time/day phrase>.
```

```
* <hydrometeorological basis>
* (optional) <potential impacts>
<statement defining meaning of a watch>
<(optional) call-to-action statement>
$$
```

*or / and (for expansions in area):*

```
stZ001-005>015-ddhhmm-
/k. EXA.cccc.pp 2.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH IN EFFECT <FROM <time/day phrase 4> <TO or
THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE

* <FLOOD or FLASH FLOOD> WATCH TO INCLUDE <A> <PORTION<S> OF> <geog. area>3...
INCLUDING THE FOLLOWING <COUNTIES or AREAS>...<(optional) IN <optional
directional term> <state>...><zone #1>...<zone #2> AND <zone #n>.5

* <FROM <time/day phrase> 4 <TO or THROUGH> <time/day phrase>> or
<UNTIL or THROUGH> <time/day phrase>.

* <hydrometeorological basis for watch expansion>

* (optional) <potential impacts>

<statement defining meaning of a watch>

<(optional) call-to-action statement>

$$
```

*or / and (for extensions in time):*

```
stZ001-005>015-ddhhmm-
/k. EXT.cccc.pp 2.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<zone #1>-<zone #2>-<zone #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...<FLOOD or FLASH FLOOD> WATCH NOW IN EFFECT <FROM <time/day phrase 4> <TO
or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day phrase>...

THE <FLOOD or FLASH FLOOD> WATCH IS NOW IN EFFECT FOR

* <A> <PORTION<S> OF> <geographic area> 3...INCLUDING THE FOLLOWING
<COUNTIES or AREAS>...<(optional) IN <optional directional term>
<state>...> <zone #1>...<zone #2> AND <zone #n>.5

* <FROM <time/day phrase> 4 <TO or THROUGH> <time/day phrase>> or
<UNTIL or THROUGH> <time/day phrase>.

* <hydrometeorological basis for extending the watch>

* (optional) <potential impacts>
```

```
<statement defining meaning of a watch>
```

```
<(optional) call-to-action statement>
```

```
$$
```

*or / and (for continuations):*

```
stZ001-005>015-ddhhmm-
```

```
/k.CON.cccc.pp2.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
```

```
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
```

```
<zone #1>-<zone #2>-<zone #n>-
```

```
INCLUDING <THE CITIES OF> location...location
```

```
hhmm am/pm time_zone day mon dd yyyy
```

```
...<FLOOD or FLASH FLOOD> WATCH REMAINS IN EFFECT <FROM <time/day phrase4>
<TO or THROUGH> <time/day phrase>> or <UNTIL or THROUGH> <time/day
phrase>...
```

```
THE <FLOOD or FLASH FLOOD> WATCH CONTINUES FOR
```

```
* <A> <PORTION<S> OF> <geographic area>3...INCLUDING THE FOLLOWING
<COUNTIES or AREAS>...<(optional)IN <optional directional term>
<state>...> <zone #1>...<zone #2>...<zone #n>.5
```

```
* <FROM <time/day phrase>4 <TO or THROUGH> <time/day phrase>> or
<UNTIL or THROUGH> <time/day phrase>.
```

```
* <current hydrometeorological situation>
```

```
* (optional) <potential impacts>
```

```
<statement defining meaning of a watch>
```

```
<(optional) call-to-action statement>
```

```
$$
```

```
<(optional) Name/Initials/Forecaster ID>
```

Note (1): The MND Broadcast Instruction Line is only used for initial product issuances (i.e., NEW) and expansions/extensions (i.e., EXA, EXT, or EXB), or for correction products (COR) for these four issuance types. It is not included in follow-ups for a previously issued product (i.e., those with CAN, EXP, and/or CON segments).

Note (2): for Phenomena Code pp: **FF** is entered if product is a flash flood watch, **FA** is entered if product is a flood watch (for longer-fused flooding).

Note (3): All or any part of "<A> <PORTION<S> OF>" may be omitted if necessary. <geographic area> may be any type of area (e.g., SOUTHEAST KANSAS or river/stream name), followed by a list of zone or county names, separated by state names if more than one state is covered.

Note (4): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701).

Note (5): Additional states and associated counties may be listed after this sentence as needed.

Note (6): When the valid time period of a watch has been changed (made longer or shorter) and the valid area has been expanded, two segments are used: one uses the EXB action code (for the newly added area) and the other with either the EXT action code (if the area being continued has an updated valid time) or the CON action code (if the area being continued is keeping its original valid time) (NWSI 10-1703, sec. 2.1.2, EXB paragraphs).

**Figure 2.** Generic format for an areal flood watch (FFA).

**3.4 Updates, Amendments, and Corrections.** Provide updates to an areal flood watch by issuing another product dictated by the above issuance criteria. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**4. Flood Watch for Forecast Points (FFA). VTEC Phenomena Code: FL, Significance Code: A.** This optional product is issued by some NWS offices to inform the public of the possibility of flooding – typically within a 6 to 48 hour time frame before the event - at specific forecast points on rivers and streams. A flood watch for forecast points may be issued for locations within an area covered by an areal flood watch, or for locations in an area which is not covered by an areal flood watch.

4.1 Mission Connection. Flood watches help the NWS meet its mission by providing advance notice and up-to-date information on the possibility of flooding. This allows users to begin monitoring hydrometeorological conditions more closely and elevate flood mitigation resources to a higher state of readiness, thus helping to protect life and property.

4.2 Issuance Guidelines.

4.2.1 Creation Software. Flood watches for forecast points will be created with the RiverPro application.

4.2.2 Issuance Criteria. Flood watches for forecast points are issued for specific locations in a WFO's HSA. They may be issued when one or more of the following conditions are met:

- a. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding within a 48-hour period; or
- b. The possibility exists for meteorological, soil, and/or hydrologic conditions to lead to flooding more than 48 hours into the future and the forecaster determines that the flood watch is the best way to convey this possibility; or
- c. A dam or levee may fail and threaten lives or property, but the threat is not deemed to be imminent, or
- d. The effective time of a previously issued watch changes; and/or
- e. An update to a previously issued flood watch is required; and/or
- g. A cancellation of all or some of the forecast points in a previously issued flood watch is required; and/or
- h. The expiration of a previously issued flood watch is to be announced (optional - if required by regional or local office policies).

4.2.3 Issuance Time. Flood watches for forecast points are non-scheduled, event-driven products.

4.2.4 Valid Time. A flood watch for forecast points will be valid until the time when the potential for flooding is expected to end, or until the product is cancelled or has expired.

4.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is generally set to be 6 to 8 hours after product issuance, but may be upwards of 12 to 24 hours for longer-fused potential flood situations. This time should be set to indicate when the next update will be issued, or, when approaching the end of the watch period, match the product valid time contained in the product bullets. When announcing expiration or cancellation of a flood watch, the product expiration time is not more than one half hour after the watch expiration or cancellation time.

#### 4.3 Technical Description.

4.3.1 UGC Type. Zone codes should be used. Include UGCs for all areas which use the forecast point as an index for flooding problems.

4.3.2 MND Broadcast Instruction Line. Use: “URGENT - IMMEDIATE BROADCAST REQUESTED” for initial product issuances and extensions in time. Note: “BULLETIN” may be used in exceptional situations such as potential dam failures. See NWS Instruction 10-1701 for criteria on use of the terms “Urgent” and “Bulletin.”

4.3.3 MND Product Type Line. Use: “FLOOD WATCH.”

4.3.4 Content. The flood watch for forecast points uses a segmented, bullet format. An optional general overview/synopsis section will be provided at the top of the product. The required segmented watch information section begins with the first UGC line **followed immediately by a P-VTEC string**.

4.3.4.1 General Overview/Synopsis Section. This optional section contains the following items:

- a. General Overview Headline - One or more headlines summarizing the flood threat, affected area, and possible time of development. Each overview headline starts and ends with three periods “...” (ellipses).
- b. General Synopsis - a brief, non-technical description of the potential flood situation and contributing hydrometeorological factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.” If quantitative precipitation forecasts (QPF) are a factor in the issuance of this product, a description of the range of assumed QPF values will be included.

At the end of this section, a call-to-action statement, web URL for additional information, and statement describing the time for the next scheduled update may be included.

4.3.4.2 Segmented Watch Information Section. Information needed in a given flood watch for forecast points will be divided into one or more segments. If multiple segments are needed, they will be provided in the following order:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. New issuances (NEW)
- e. Extensions in time (EXT)
- f. Continuations (CON)

Segments covering new issuances (NEW), extensions in time (EXT), and continuations (CON) will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/time stamp as shown in Figure 3. In the H-VTEC, only the immediate cause (ic) and NWSLI are entered - zeros are entered for the flood severity (s) and the start, crest, and end times; and OO (double capital "O") is entered for flood record (fr).
- b. One of the following action lead-in phrases: "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A" (for new issuances), "THE FLOOD WATCH CONTINUES FOR" (for continuations), or "THE FLOOD WATCH IS EXTENDED FOR" (for extensions), followed on the next line by the river/stream and location names, followed by four to seven bullets delimited by asterisks (\*), described as follows (bullets may be more than six lines):
  - (1) FROM/TO or UNTIL information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the watch is to become effective within three hours of product issuance, only the UNTIL information is provided.
  - (2) AT followed by the time of observation and the current stage/flow.
  - (3) Description of category of possible flooding, if known.
  - (4) Flood stage/flow at the forecast point. Separate bullets with other stages such as caution stage may also be listed before or after this bullet.
  - (5) (Optional) Forecast information - e.g., time when the river/stream could reach flood stage/flow, possible crest/peak flow and time/day it could occur, and other relevant forecast information.
  - (6) (Optional) Description of the known impacts of flooding at given stages (or flows) within the expected range of forecast values.

Observed and forecast data in tabular format may be presented at the end of each segment, or at the end of the product after the last segment.

Segments announcing cancellation (CAN) or expiration (EXP) will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/time stamp as shown in Figure 3. In H-VTEC, use the same flood severity “s” as the most recently issued NEW, CON, or EXT segment.
- b. An action lead-in phrase “THE FLOOD WATCH IS CANCELLED FOR” (for cancellations), or THE FLOOD WATCH HAS EXPIRED FOR” (for expirations) followed by the river/stream and location names, followed by two bullets delimited by asterisks (\*), described as follows (bullets may be more than six lines):
  - (1) AT followed by the time of observation and the current stage/flow.
  - (2) Brief post-event summary for the forecast point and relevant forecast information.

#### 4.3.5 Format. The generic format is shown below in Figure 3:

```
WGA1A2ii cccc ddhhmm (BBB)
FFAxxx
```

```
URGENT- IMMEDIATE BROADCAST REQUESTED 1
FLOOD WATCH
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

*The following overview headline/synopsis section within the next brackets is required:*

```
[...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
FLOOD WATCH <(optional) UNTIL <time/day phrase> 1> FOR THE FOLLOWING
<LOCATION(S) or RIVER(S)> <IN or ON> <geographic name or phrase>...

- or -

...THE FLOOD WATCH CONTINUES <(optional) UNTIL <time/day phrase> 1> FOR
THE FOLLOWING <LOCATION(S) or RIVER(S)> <IN or ON> <geographic name
or phrase>...

<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
.
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>

(optional:) AFFECTING THE FOLLOWING COUNTIES IN <state>....<county #1>...
<county #2> AND <county #n>

and / or

...THE FLOOD WATCH <IS CANCELLED or HAS EXPIRED> FOR THE FOLLOWING
<LOCATION(S) or RIVER(S)> <IN or ON> <geographic name or phrase>...

<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
.
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>]
```

(optional:) AFFECTING THE FOLLOWING COUNTIES IN <state>...<county #1>...  
<county #2> AND <county #n>

.<General synopsis>

THE SEGMENTS IN THIS PRODUCT ARE RIVER FORECASTS FOR SELECTED  
LOCATIONS IN THE WATCH AREA <(optional) BASED ON CURRENTLY AVAILABLE  
RAINFALL FORECASTS RANGING FROM <QPF lower range> TO <QPF upper range>  
INCHES OVER THE <river/basin name(s)>>...

(optional:) <call-to-action>

(optional:) ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>

(optional:) THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>

*(Include one or more of the following segments in the indicated order:)*

```
stZ001-005>015-ddhhmm-
/k.COR.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

<Appropriate text as shown in one of the segment types below>

\$\$

*or / and (for cancellations):*

```
stZ001-005>015-ddhhmm-
/k.CAN.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

THE FLOOD WATCH IS CANCELLED FOR

<river/stream name> <proximity term - e.g., AT> <location>

\* AT <time> <sup>2</sup> <day> THE <STAGE/FLOW> <sup>3</sup> WAS... <stage/flow>

\* FORECAST... <post-event summary with relevant forecast information>

&& (optional)

<optional tabular observed/forecast values for segment>

\$\$

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for expirations):*

```
stZ001-005>015-ddhhmm-
/k.EXP.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

THE FLOOD WATCH HAS EXPIRED FOR

<river/stream name> <proximity term - e.g., AT> <location>

\* AT <time> <sup>2</sup> <day> THE LATEST <STAGE/FLOW> <sup>3</sup> IS... <stage/flow>

\* FORECAST... <post-event summary with relevant forecast information>

&& (optional)

<optional tabular observed/forecast values for segment>

\$\$

*(For each additional forecast point (if any), repeat the above in a separate segment)*



*or / and (for new issuances):*

```
stZ001-005>015-ddhhmm-
/k.NEW.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
* FLOOD WATCH FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase> 4 TO <time/day phrase>> or <UNTIL <time/day phrase>>
* AT <time> 3 <day> THE <STAGE/FLOW> 3 WAS...<stage/flow>
* <flood category> FLOODING IS POSSIBLE 5
* <other stage/flow type> 6 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...FLOOD <STAGE/FLOW> MAY BE REACHED AT <time> <day>. <optional
  additional forecast information (e.g., possible crest/time)>
* <description of impacts at given stage(s)/flow(s)> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for extensions in time)*

```
stZ001-005>015-ddhhmm-
/k.EXT.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD WATCH IS EXTENDED FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase> 4 TO <time/day phrase>> or UNTIL <time/day phrase>
* AT <time> 2 <day> THE <STAGE/FLOW> 3 WAS...<stage/flow>
* <flood category> FLOODING IS POSSIBLE 5
* <other stage/flow type> 6 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...FLOOD <STAGE/FLOW> MAY BE REACHED AT <time> <day>. <optional
  additional forecast information (e.g., possible crest/time)>
* <description of impacts at given stage(s)/flow(s)> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for continuations)*

```
stZ001-005>015-ddhhmm-
/k.CON.cccc.FL.A.####.yyymmddThhnnZB-yyymmddThhnnZE/
/nwsli.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional)...Headline...>
```

```
THE FLOOD WATCH CONTINUES FOR
```

```
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase> 4 TO <time/day phrase>> or UNTIL <time/day phrase>
* AT <time> 2 <day> THE <STAGE/FLOW> 3 WAS...<stage/flow>
* <flood category> FLOODING IS POSSIBLE 5
* <other stage/flow type> 6 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...FLOOD <STAGE/FLOW> MAY BE REACHED AT <time> <day>. <optional
  additional forecast information (e.g., possible crest/time)>
* <description of impacts at given stage(s)/flow(s)> (optional)
```

```
&& (optional)
```

```
<optional tabular observed/forecast values for segment>
```

```
$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

```
&& (optional)
```

```
TABULAR FORECAST INFORMATION (optional)
```

```
<tabular observed/forecast values for entire product> (optional)
```

```
$$
```

```
<Name/Initials/Forecaster ID> (optional)
```

Note (1): The MND Broadcast Instruction Line is only used for new and extension issuances.

Note (2): Where <time> stands alone as a variable, the format is **hhmm am/pm time\_zone**.

Note (3): “Stage / flow” means either stage and/or discharge values may be used.

Note (4): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701).

Note (5): Include forecast category phrase if applicable and flood categories are available.

Note (6): Examples of “other stage/flow type:” CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

**Figure 3.** Generic format for flood watch for forecast points.

4.4 Updates, Amendments, and Corrections. Provide updates by issuing another flood watch as dictated by the above issuance criteria. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

## 5. **Flash Flood Warning (FFW).** **VTEC Phenomena Code: FF, Significance Code: W.**

Flash flood warnings are issued when flooding is imminent. This product will be reserved for those short-term events which require immediate action to protect lives and property, such as dangerous small stream flooding or urban flooding and dam or levee failures. The geographic areas addressed by flash flood warnings may be counties, portions of counties, river/stream basins, or other definable areas (e.g., deserts, valleys). Flash flood warnings may include observations and forecasts for specific points. Flash flood warnings and tornado warnings will not be combined in the same product. Flash flood warnings should not be combined with severe thunderstorm warnings.

5.1 Mission Connection. Flash flood warnings help the NWS to meet its mission by providing advance notification of dangerous, short-fused flood events. This allows users to take immediate mitigation actions such as evacuation to higher ground, thus helping to protect life and property.

5.2 Issuance Guidelines.

5.2.1 Creation Software. Create flash flood warnings using the WarnGen application.

5.2.2 Issuance Criteria. A flash flood warning will be issued for a county or counties (zones - Alaska, Guam, and American Samoa) in a WFO's CWA when:

- a. Flash flooding is reported; and/or
- b. A dam or levee failure is imminent or occurring; and/or
- c. A sudden failure of a naturally-caused stream obstruction (including debris slide, avalanche, or ice jam) is imminent or occurring, and/or
- d. Precipitation capable of causing flash flooding is indicated by radar, rain gages, and/or satellite; and/or
- e. Local monitoring and prediction tools indicate flash flooding is likely; and/or
- f. A hydrologic model indicates flash flooding for locations on small streams, or
- g. A previously issued flash flood warning needs to be extended in time.
- h. Flash flooding is imminent or occurring in one or more additional counties (zones - Alaska, Guam, and American Samoa) currently not under a valid flash flood warning. Note: a new warning may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).

5.2.3 Issuance Time. Flash flood warnings are non-scheduled, event-driven products.

5.2.4 Valid Time. A flash flood warning will be valid until the time when flooding (requiring immediate actions to protect lives and property) is expected to end, as indicated in the second bullet, or until the product is cancelled. When determining the valid time or considering an appropriate time for warning cancellation, the ending time for the flooding should be the determining factor rather than the end of heavy precipitation.

5.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is the same as the warning valid time in the headline (local time).

5.3 Technical Description.

5.3.1 UGC Type. Use County codes (Zone for Alaska, Guam, and American Samoa).

5.3.2 MND Broadcast Instruction Line. Use: "BULLETIN - EAS ACTIVATION REQUESTED."

5.3.3 MND Product Type Line. Use: “FLASH FLOOD WARNING.”

5.3.4 Content. Flash flood warnings use a bullet format and will include:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 4. Whether or not point-specific forecast information is included, only immediate cause (ic) is entered in the H-VTEC string - zeros are entered for the NWS location identifier (NWSLI), flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr). If the product provides information on flash flooding which is not the direct result of heavy precipitation (e.g, a dam failure) and the flood severity is unknown, the flood severity code “s” is set to “U.”
- b. The action lead-in phrase “THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A” (for new issuances) or THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE” (for extensions), followed by three to four bullets delimited by asterisks (\*), with the following information (bullets may be more than six lines):
  - (1) First bullet - FLASH FLOOD WARNING FOR, followed by a list of the counties covered with, if needed, appropriate geographic modifiers, e.g., <county> IN NORTH CENTRAL <state>, SOUTHWEST <county> IN <state>, SOUTHWEST <county> in SOUTHEASTERN <state>, or THE MOUNTAINS AND DESERTS OF SOUTHWEST <county> IN SOUTHERN <state>.
  - (2) Second bullet - UNTIL, followed by the event ending time.
  - (3) Third bullet - AT, followed by a discussion of the warning basis and expected impacts.
  - (4) Fourth bullet (optional) - pathcast, i.e., forecast path of the flood with specific locations to be affected (e.g., cities, streets, mile markers, and neighborhoods).

Basin- or point-specific information may be integrated into the bullets.
- c. A call-to-action statement following the bullets. Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.
- d. Latitude/longitude polygon coordinates defining the warning area.

If a flash flood warning provides hydrologic observations and/or forecasts for specific locations, the product will also include the following as shown in Figure 5:

- a. A double ampersand (&&) delimiter to indicate a different data type will follow after the latitude/longitude polygon coordinates.
- b. Bulleted observation and forecast information.
- c. Optional tabular hydrologic observations and/or site-specific forecasts, with a && delimiter before the table to indicate a different data type will follow.

### 5.3.5 Format. Follow the generic format shown below in Figure 4:

```

WGA1A2ii cccc ddhhmm (BBB)
FFWxxx
stC001-005>015-ddhhmm-
/k.aaa1.cccc.FF.W.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLASH FLOOD WARNING FOR 2
  <county #1, with appropriate geographic modifier(s)> 3
  <county #2, with appropriate geographic modifier(s)>
  .
  <county #n, with appropriate geographic modifier(s)>
  (optional) <INCLUDING <THE CITIES OF> location...location>

* UNTIL hhmm am/pm time_zone 4                                     (expiration time of warning)

* AT hhmm am/pm time_zone <warning basis statement and expected impacts> 2

* <(optional) pathcast 2 - forecast path of flood or sequence of locations
  to be affected>

<call-to-action statement>

LAT...LON  nnnn nnnn                                     ⚡ (mandatory list of latitude/longitude points outlining
                                                             the forecaster-drawn polygon defining the warning area)

$$

<(optional) forecaster name/number>
-----

```

Note (1): For flash flood warnings, the action code may only be NEW, EXT, or COR.

Note (2): the length of the first, third, and fourth bullets may be longer than six (6) lines to convey necessary warning area, warning basis, and pathcast information.

Note (3): <county #, with appropriate geographic modifier(s)> may be any type of county-based area – e.g., SOUTHWEST LOS ANGELES COUNTY IN SOUTHERN CALIFORNIA).

Note (4): It is optional to include a day name after the time when needed.

**Figure 4.** Generic format for a flash flood warning issued for a defined area.

For a flash flood warning which includes observations and forecasts for one or more specific points in the warning area, follow the generic format shown below in figure 5:

```
WGA1A2ii cccc ddhhmm (BBB)
FFWxxx
stC001-005>015-ddhhmm-
/k.aaa1.cccc.FF.W.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone mon dd yyyy

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLASH FLOOD WARNING FOR 2
  <county #1, with appropriate geographic modifier(s)>
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
  (optional) <INCLUDING <THE CITIES OF> location...location>

* UNTIL hhmm am/pm time_zone

* AT hhmm am/pm time_zone <warning basis statement and expected impacts> 2

* (optional) <pathcast 2 - forecast path of flood>

<call-to-action statement>

LAT...LON  nnnn nnnn                                ⚡ (mandatory list of latitude/longitude points)

&&
FORECAST(S) FOR SPECIFIC LOCATION(S) IN THE FLASH FLOOD WARNING AREA:

<(optional) UGC line>
<nwsli> 3

FOR THE <river/stream name> <proximity term - e.g., AT> <location>:
* AT <time> <day> THE <STAGE/FLOW> WAS...<stage/flow> 4
* <flood category> FLOODING IS OCCURRING AND (optional) <flood category>
  FLOODING IS FORECAST 5
* <other stage/flow type> 6 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...FLOOD <STAGE/FLOW> <WILL BE REACHED or WAS REACHED> AT
  <time> <day>. <One or more optional sentences with additional forecast
  information such as forecast crest/time and time for fall below flood
  stage/flow.>
* <description of impacts at given stage(s)/flow(s)> (optional)

(If there are additional points, repeat using this format without separating with another &&)

&&
TABULAR FORECAST INFORMATION (optional)
<tabular forecast values for river/stream covered above> (optional)

<Name/Initials/Forecaster ID> (optional)
```

-----  
**Note (1): For flash flood warnings, the action code may only be NEW, EXT, or COR.**

Note (2): the length of the first, third, and fourth bullets may be longer than six (6) lines to convey necessary warning area, warning basis, and pathcast information.

Note (3): The NW SLI is **zeroed out in the H-VTEC string, but is** included above the stream/location name. This allows forecasts for more than one specific location in the flash flood warning area to be provided.

Note (4): “Stage/flow” means either stage and/or discharge values may be used.

Note (5): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (6): Examples of “other stage/flow type”: CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

**Figure 5.** Generic format for a flash flood warning providing observations and/or forecasts for specific locations in the warning area.

5.4 **Updates, Amendments, and Corrections.** Provide updates by issuing a flash flood statement per instructions in section 6.2.2. Amendments are not applicable. WFOs will correct flash flood warnings for significant grammatical, format, or dissemination code errors, or for counties either omitted or erroneously added to a warning. Corrected warnings will have the same time in the MND header **and the same event tracking number (ETN) in the VTEC string** as the original warning. WFOs should issue flash flood statements to notify users when erroneous counties/zones were removed from original warnings (either in the UGC code or the body of the warning).

**6. Flash Flood Statement (FFS). VTEC Phenomena Code: FF, Significance Code: W.** Flash flood statements provide supplemental information on active flash flood warning products, such as updated observations and impact information.

6.1 **Mission Connection.** Flash flood statements help the NWS to meet its mission by providing the information users need to direct mitigation activities towards continuing flash flood threats and/or receding flood situations where waters continue to present a danger to lives and property.

6.2 **Issuance Guidelines.**

6.2.1 **Creation Software.** Create flash flood statements using the WarnGen application.

6.2.2 **Issuance Criteria.** Flash flood statements will be issued for a WFO’s CWA to:

- a. Announce cancellation or expiration of a flash flood warning; and/or
- b. Provide additional information to supplement a continuing flash flood warning.

6.2.3 **Issuance Time.** Flash flood statements are non-scheduled, event-driven products, issued when necessary according to the above issuance criteria.

6.2.4 **Valid Time.** A flash flood warning described in a flash flood statement will continue to be valid until it expires or is cancelled or updated by another flash flood statement.

6.2.5 **Product Expiration Time.** For flash flood statements providing supplemental information on (but not cancelling) a flash flood warning, the product expiration time (at the end of the UGC

line) is the same as product expiration time for the referenced flash flood warning. For flash flood statements announcing expiration or cancellation of a flash flood warning, the product expiration time is not more than ten minutes after the warning expiration or cancellation time.

### 6.3 Technical Description.

6.3.1 UGC Type. Use County codes (Zone for Alaska, Guam, and American Samoa).

6.3.2 MND Broadcast Instruction Line. Not applicable to the flash flood statement.

6.3.3 MND Product Type Line. Use: “FLASH FLOOD STATEMENT.”

6.3.4 Content. The flash flood statement product uses a segmented, non-bulleted format. If more than one type of segment is needed (e.g., cancellation plus continuation) in a given product, they will be ordered by **VTEC action code** as follows:

- a. Corrections (**COR**)
- b. Cancellations (**CAN**)
- c. Expirations (**EXP**)
- d. Continuations (**CON**)

Note: there will be no segments for new issuances (**NEW**), expansions in area (**EXA**), extensions in time (**EXT**), and extensions in both time and area (**EXB**). All such situations will be covered by issuance of new flash flood warning products. For the situation when a multi-county flash flood warning needs to be cancelled for part of its original area and extended in time for the other part, issue a single-segment FFS with a **CAN action code and the original event tracking number (ETN)** for the area being cancelled and then issue a separate FFW product using an **EXT action code and the original ETN** for the area being extended.

All segments in flash flood statements will include the following:

- a. UGC line, **P-VTEC string, H-VTEC string**, counties/cities listing, and date/time stamp as shown in Figure 4. **Whether or not point-specific forecast information is included, only immediate cause (ic) is entered in the H-VTEC string - zeros are entered for the NWS location identifier (NWSLI), flood severity (s) and the start, crest, and end times; and OO (double capital “O”) is entered for flood record (fr). If the product provides information on flash flooding which is not the direct result of heavy precipitation (e.g, a dam failure) and the flood severity is unknown, the flood severity code “s” is set to “U.”**
- b. Headline with indication of whether the flash flood warning continues to be in effect or is being cancelled or allowed to expire, followed by the area covered by the flash flood warning;
- c. Update on current/future hydrometeorological conditions and impacts;



- d. Call-to-action statement. Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.
- e. Latitude/longitude polygon coordinates defining the warning area.

If hydrologic observations and/or forecasts for specific locations are included, use the same format after a double ampersand (&&) as specified for flash flood warnings (see Figure 7 below).

**6.3.5 Format.** For a flash flood statement providing supplemental information on a flash flood warning issued for a defined area, follow the generic format shown below in Figure 6:

```
WGA1A2ii cccc ddhhmm (BBB)
FFSxxx
```

```
FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone day mon dd yyyy
```

*(Include one or more of the following segments in the indicated order:)*

*For corrections:*

```
stC001-005>015-ddhhmm-
/k.COR.cccc.FF.W1.####.yyymmddThhnnZE-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>

$$
```

*or / and (for cancellations):*

```
stC001-005>015-ddhhmm-
/k.CAN.cccc.FF.W1.####.yyymmddThhnnZE-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLASH FLOOD WARNING HAS BEEN CANCELLED FOR <geographic area>...

<Brief post-event synopsis>

LAT...LON nnnn nnnn

$$
```

*or / and (for expirations):*

```
stC001-005>015-ddhhmm-
/k.EXP.cccc.FF.W1.####.yyymmddThhnnZE-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE FLASH FLOOD WARNING HAS EXPIRED FOR <geographic area>...
```

```
<brief post-event synopsis>
```

```
LAT...LON  nnnn nnnn
```

```
$$
```

*or / and (for continuations):*

```
stC001-005>015-ddhhmm-
```

```
/k.CON.cccc.FF.W1.####.yymmddThhnnZB-yymmddThhnnZE/
```

```
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
```

```
<county #1>-<county #2>-<county #n>-
```

```
INCLUDING <THE CITIES OF> location...location
```

```
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone>2
FOR <geographic area>...
```

```
<current hydrometeorological situation and expected impacts>
```

```
<call-to-action statement>
```

```
LAT...LON  nnnn nnnn
```

```
$$
```

```
<Name/Initials/Forecaster ID> (optional)
```

Note (1): The significance code for this product is "W" because the flash flood statement provides supplemental information on a previously issued flash flood warning product (see NWSI 10-1703, section 2.1.5).

Note (2): It is optional to include a day name after the time, when needed.

**Figure 6.** Generic format for a flash flood statement for a defined area.

For a flash flood statement with forecasts for specific locations, follow the generic format shown below in Figure 7.

```
WGA1A2ii cccc ddhhmm (BBB)
FFSxxx
```

```
FLASH FLOOD STATEMENT
```

```
NATIONAL WEATHER SERVICE <WFO location>
```

```
hhmm am/pm time_zone day mon dd yyyy
```

```
stC001-005>015-ddhhmm-
```

```
/k.CON.cccc.FF.W1.####.yymmddThhnnZB-yymmddThhnnZE/
```

```
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
```

```
<county #1>-<county #2>-<county #n>-
```

```
INCLUDING <THE CITIES OF> location...location
```

```
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE FLASH FLOOD WARNING REMAINS IN EFFECT UNTIL <hhmm am/pm time_zone>
FOR <geographic area>...
```

```
<current hydrometeorological situation and expected impacts>
```

```
<call-to-action statement>
```

```
LAT...LON  nnnn nnnn
```

```

&&
FORECAST(S) FOR SPECIFIC LOCATION(S) IN THE FLASH FLOOD WARNING AREA:

<(optional) UGC line>
<nwsli> 2

FOR THE <river/stream name> <proximity term - e.g., AT> <location>:
* AT <time> <day> THE <STAGE/FLOW> WAS...<stage/flow> 3
* <flood category> FLOODING IS OCCURRING AND (optional) <flood category>
  FLOODING IS FORECAST 4
* <other stage/flow type> 5 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...FLOOD <STAGE/FLOW> <WILL BE REACHED or WAS REACHED> AT
  <time> <day>. <One or more optional sentences with additional forecast
  information or observations such as forecast crest/time and time for fall
  below flood stage/flow.>
* <description of impacts at given stage(s)/flow(s)> (optional)

(If there are additional points, repeat using this format, without separating with another &&)

&& TABULAR FORECAST INFORMATION (optional)
<tabular forecast values> (optional)

$$

<Name/Initials/Forecaster ID> (optional)
_____

```

Note (1): The significance code for this product is “W” because the flash flood statement provides supplemental information on a previously issued flash flood warning product (see NWSI 10-1703, section 2.1.5).

Note (2): The NWSLI is zeroed out in the top H-VTEC string, but is included above each stream/location name.

Note (3): “Stage/flow” means either stage and/or discharge values may be used.

Note (4): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (5): Examples of “other stage/flow type” are: CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

**Figure 7.** Generic format for a flash flood statements with forecasts for specific locations.

Note that Figure 7 only shows a generic format for continuation segments. Use the following instructions to determine the format for segments with other action codes:

- a. For the top portion (i.e., from WMO header to latitude/longitude coordinates); use the same format for that segment action shown in Figure 6.
- b. For the bottom portion (i.e., after a double ampersand [&&]) of each segment, use the same format provided for point-specific forecast information in Figure 7.

**6.4 Updates, Amendments, and Corrections.** Provide additional updates to current flash flood warnings by issuing flash flood statements. Amendments are not applicable to this product. WFOs will correct flash flood statements for format and grammatical errors as required.

**7. Flood Warning For Forecast Points (FLW).** **VTEC Phenomena Code: FL,** **Significance Code: W.** Flood warnings for forecast points are issued for any high flow, over-flow, or inundation threatening lives and property which can be quantified or indexed at specific locations and are not covered by flash flood warning products. Flood warnings for forecast points usually include information on the impacted upstream and/or downstream locations.

Note: a flood warning for forecast points may be in effect the same time as a flash flood warning for the encompassing area.

7.1 Mission Connection. Flood warnings help the NWS to meet its mission by providing advance notice of imminent or occurring flooding. This gives users time to initiate mitigation actions such as evacuation, removal of goods and belongings, alteration of reservoir releases, and activation of diversion works, thus helping to protect life and property.

7.2 Issuance Guidelines.

7.2.1 Creation Software. RiverPro in the WHFS will be used.

7.2.2 Issuance Criteria. Flood warnings for forecast points will be issued for a WFO's HSA when:

- a. Flood monitoring and prediction tools and/or RFC guidance indicate flooding is likely; and/or
- b. Reports or observations indicate flooding is occurring; or
- c. The maximum of observed or forecast flooding increases to a higher category (e.g., minor to moderate) than the maximum of observed or forecast flooding indicated in the previously issued flood warning/statement. (Flood categories are defined in NWS Manual 10-950, *Definitions and General Terminology*.) This maximum is simply the greater of either the current observed flooding or the highest forecast flooding indicated at a given product issuance.

When an increase in flood category has occurred or is forecast to occur, a separate flood warning product will be issued for the forecast points involved using the CON or EXT action codes and a special headline. The event tracking numbers associated with the affected forecast points will remain the same as in the previously issued flood warning/statement. Event tracking numbers in subsequently issued flood statements will also remain the same. Other forecast points which are under a flood warning but not affected by a change in flood category will be covered in a separate flood statement product.

7.2.3 Issuance Time. Flood warnings are non-scheduled, event-driven products.

7.2.4 Valid Time. Flood warnings for forecast points will be valid until the time indicated in the event ending date/time group in the P-VTEC string and/or the second bullet, or until the warning for each forecast point in the product is cancelled in a subsequently issued flood statement. If river/stream characteristics and/or hydrometeorological conditions make it impractical to specify when the event will end, the event ending date/time group and the flood end date/time group are coded with ten zeros (000000T0000Z) and "UNTIL FURTHER NOTICE" is used in the second bullet.

7.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as low as 6 hours for more rapidly changing flood situations.

### 7.3 Technical Description.

7.3.1 UGC Type. County codes should be used (Zone for Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

7.3.2 MND Broadcast Instruction Line. Use: “BULLETIN - EAS ACTIVATION REQUESTED” or “BULLETIN - IMMEDIATE BROADCAST REQUESTED,” or omit depending on the urgency of the hydrologic situation, regional policies, and partner/user requirements.

7.3.3 MND Product Type Line. Use: “FLOOD WARNING.”

7.3.4 Content. The flood warning product uses a segmented, bullet format. An optional general overview/synopsis section may be provided at the top of the product. The segmented warning information section begins with the first UGC line followed by a P-VTEC string.

7.3.4.1 General Overview/Synopsis Section. This usually optional section contains at least one of the following items:

- a. General Overview Headline - One or more headlines summarizing the type of products in effect, the action being taken, and the expected event duration (if known). Each overview headline starts and ends with three periods “...” (ellipses). A list of forecast points may appear below the headlines.
- b. General Synopsis - a brief, non-technical description of the flood situation. A tabular summary of rivers and forecast points covered in the product and/or a discussion of contributing hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.”. If a call-to-action statement is included, it should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

The general overview headline is required when a flood warning product contains one or more segments announcing an increase in flood category. In such cases, the headline clearly indicates this increase – e.g., “... Flooding forecast to increase in severity on the Green River...”

7.3.4.2 Segmented Warning Information Section. Information in a flood warning product will be divided into one or more segments. Each location covered in the product will have its own segment (segmentation by forecast point). This provides for straightforward application of VTEC action codes (e.g., CAN, CON) in subsequent flood products for each forecast point, allows the NWS location identifier to be used in each H-VTEC string to uniquely identify the forecast point, and maximizes the meaning of values in the date/time groups of the H-VTEC string. Correction

segments (COR) will appear first before any new issuance segments (NEW). New issuance segments may be grouped in any desired order (e.g., by county, forecast basin, downstream order). A county UGC may be associated with more than one segment in this product.

Each segment of a flood warning for forecast points will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/time stamp as shown in Figure 8. If the flood severity code “s” in the H-VTEC string is unknown, enter “U”. Use zeros for any unknown date/time group.
- b. Headline summarizing the segment content (optional for new issuances).
- c. The action lead-in phrase: “THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A.” After this, two bullets delimited by asterisks (\*) will contain the following:
  - (1) First bullet - FLOOD WARNING FOR, followed on the next line by the river/stream and location (forecast point) name.
  - (2) Second bullet - FROM/TO or UNTIL information, obtained from the Event (i.e., flood) Beginning and Event Ending Date/Times used in the P-VTEC string. If the flooding is to begin within three hours of product issuance, only the UNTIL information is provided. If the event ending time cannot be specified, use FURTHER NOTICE in its place. Use general date/time phrases such as TUESDAY AFTERNOON instead of specific date/times.

For products announcing flood category increases, the first bullet is not used. The action lead-in phrase would then be THE FLOOD WARNING CONTINUES FOR, followed on the next line by the river/stream and location (forecast point) name, followed by the bullet described in (2) above.
- d. Bulleted warning information for the forecast point consisting of the following (bullets may be longer than six lines if necessary):
  - (1) AT followed by the time of observation and the current stage/flow.
  - (2) One or both of the following as applicable (if flood category information is available) - description of category of current flooding, if flooding is already occurring, and description of the category of expected flooding.
  - (3) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).
  - (4) Forecast information - e.g., time when the river/stream will reach flood stage/flow, forecast crest/peak flow and time/day when expected, time

when river/stream will fall below flood stage/flow, and other relevant forecast information.

- (5) (Optional) Description of the known impacts of flooding at given stages (or flows) within the expected range of forecast values.
- (6) (Optional) Flood history information.

Observed and forecast data in tabular format may be presented at the end of each segment, or at the end of the product after the last segment.

7.3.5 Format. The generic format is shown below in figure 8:

```
WGA1A2ii cccc ddhhmm (BBB)
FLWxxx
```

```
BULLETIN - EAS ACTIVATION (or IMMEDIATE BROADCAST) REQUESTED (Optional)
FLOOD WARNING
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

*The following overview headline/synopsis section within the brackets is optional:*

```
[...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
FLOOD WARNING <(optional) UNTIL <time/day phrase> 1> FOR THE FOLLOWING
<RIVER(S) or STREAM(S)> IN <geographic area>...

- or -
...<FORECAST or OBSERVED> FLOODING CHANGED FROM <category> TO <category>
SEVERITY <(optional) AND INCREASED IN DURATION> FOR THE FOLLOWING
<RIVER(S) or STREAM(S)> IN <geographic area>...

<river/stream> AT <location> (optional:) AFFECTING <county #1>...
<county #2> AND <county #n> <COUNTY or COUNTIES>
<river/stream> AT <location> (optional:) AFFECTING <county #1>...
<county #2> AND <county #n> <COUNTY or COUNTIES>
.
<river/stream> AT <location> (optional:) AFFECTING <county #1>...
<county #2> AND <county #n> <COUNTY or COUNTIES>

(optional:) AFFECTING THE FOLLOWING COUNTIES IN <state>...<county #1>...
<county #2> AND <county #n>

.<General hydrometeorological synopsis>

<(optional:) call-to-action>

(optional:) ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>

(optional:) THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>.]
```

*(Include one or more of the following segments in the indicated order<sup>2</sup>:)*

*For corrections:*

```
[stC001-005>015-ddhhmm-
/k.COR.cccc.FL.W.####.yymmddThhnnZB-yymmddThhnnZE/
/nwslis3.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy]
```

<Appropriate text as shown in one of the segment types below>

\$\$

*or / and (for new issuances):*

stC001-005>015-ddhhmm-

/k.**NEW**.cccc.**FL.W**.####.yymmddThhnnZ<sub>B</sub>-yymmddThhnnZ<sub>E</sub>/  
/nwsli.s<sup>3</sup>.ic.yymmddThhnnZ<sub>B</sub>.yymmddThhnnZ<sub>C</sub>.yymmddThhnnZ<sub>E</sub>.fr/  
hhmm am/pm time\_zone day mon dd yyyy

<(optional)...Headline...>

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A

\* FLOOD WARNING FOR

<river/stream name> <proximity term - e.g., AT> <location>

\* <FROM <time/day phrase><sup>1</sup> TO <<time/day phrase><sup>1</sup> or UNTIL FURTHER NOTICE>> or <UNTIL <time/day phrase><sup>1</sup> or FURTHER NOTICE>

\* AT <time><sup>4</sup> <day> THE <STAGE/FLOW> WAS...<stage/flow><sup>5</sup>

\* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST<sup>6</sup>

\* <other stage/flow type><sup>7</sup> <STAGE/FLOW> IS... <stage/flow> (optional)

\* FLOOD <STAGE/FLOW> IS... <flood stage/flow>

\* FORECAST...FLOOD <STAGE/FLOW> WILL BE REACHED AT <time> <day><sup>8</sup>. <One or more optional sentences with additional forecast information such as forecast crest/time and time for fall below flood stage. If second bullet uses "further notice," include best estimate of flood duration and briefly explain why it can't be specified exactly.>

\* <description of impacts at given stage(s)/flow(s)> (optional)

\* <flood history information> (optional)

&& (optional)

<optional tabular observed/forecast values for segment>

\$\$

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*(for flood category increases):*

stC001-005>015-ddhhmm-

/k.<**CON** or **EXT**><sup>9</sup>.cccc.**FL.W**.####.yymmddThhnnZ<sub>B</sub>-yymmddThhnnZ<sub>E</sub>/  
/nwsli.s<sup>3</sup>.ic.yymmddThhnnZ<sub>B</sub>.yymmddThhnnZ<sub>C</sub>.yymmddThhnnZ<sub>E</sub>.fr/  
hhmm am/pm time\_zone day mon dd yyyy

...<FORECAST or OBSERVED> FLOODING INCREASED FROM <category> TO <category>  
SEVERITY <(optional)> AND INCREASED IN DURATION UNTIL <time/day phrase>...</p>
</div>
<div>
<p>THE FLOOD WARNING CONTINUES FOR</p>
</div>
<div>
<p><river/stream name> <proximity term - e.g., AT> <location></p>
</div>
<div>
<p>\* <FROM <time/day phrase><sup>1</sup> TO <<time/day phrase><sup>1</sup> or UNTIL FURTHER NOTICE>> or <UNTIL <time/day phrase><sup>1</sup> or FURTHER NOTICE></p>
</div>
<div>
<p>\* AT <time><sup>4</sup> <day> THE <STAGE/FLOW> WAS...<stage/flow><sup>5</sup></p>
</div>
<div>
<p>\* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST</p>
</div>
<div>
<p>\* <other stage/flow type><sup>7</sup> <STAGE/FLOW> IS... <stage/flow> (optional)</p>
</div>
<div>
<p>\* FLOOD <STAGE/FLOW> IS... <flood stage/flow></p>
</div>
<div>
<p>\* FORECAST...<One or more sentences with forecast information such as when flood stage will be reached, forecast crest/time, and time for fall below flood stage. If second bullet uses "further notice," include best estimate of flood duration and briefly explain why it can't be specified exactly.></p>
</div>
<div>
<p>\* <description of impacts at given stage(s)/flow(s)> (optional)</p>
</div>
<div>
<p>\* <flood history information> (optional)</p>
</div>
</div>



```
&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

```
&& TABULAR FORECAST INFORMATION (optional - for entire product)
<tabular observed/forecast values for entire product> (optional)
```

```
<Name/Initials/Forecaster ID> (optional)
-----
```

Note (1): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701) - i.e., for beyond 12 hours: MONDAY MORNING, TUESDAY AFTERNOON.

Note (2): Cancellation (CAN), expiration (EXP), normal extension (EXT), and normal continuation (CON) segments are handled by the FLS product (see section 8).

Note (3): "U" is entered for Flood Severity code "s" if the forecast flood category is unknown.

Note (4): Where <time> stands alone as a variable, the format is **hhmm am/pm time\_zone**.

Note (5): "Stage/flow" means either stage and/or discharge values may be used.

Note (6): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (7): Examples of "other stage/flow type": CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

Note (8): Omit phrase about when flood stage will be reached if it was already reached before product was issued.

Note (9): Use EXT in category increase segments when an extension is involved, otherwise use CON.

**Figure 8.** Generic format for a flood warning for forecast points.

A flood warning with NEW (and COR) segments may also include segments for forecast points which are below flood warning criteria. Inclusion of such segments provides a complete set of forecast and warning information for a series of points along a river reach, regardless of whether or not they are in flood. Segments for forecast points which are below product issuance criteria will include VTEC strings. The generic format for these segments is shown in Figure 9.

```
stC001-005>015-ddhhmm-
/k.ROU.cccc.HY.S.0000.000000T0000Z-000000T0000Z/
/nwslI.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.NO/
hhmm am/pm time_zone day mon dd yyyy

FORECAST INFORMATION FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* AT <time> <day> THE <STAGE/FLOW> WAS...<stage/flow>
* NO FLOODING IS CURRENTLY FORECAST
* <other stage/flow type> <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with information such as the magnitude
  and timing for the forecast peak stage/flow>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

(For each additional forecast point (if any), repeat the above in a separate segment)

$$
```

**Figure 9.** Generic format for segment in a flood warning (and flood statement) which provides information on forecast points which are below flood warning criteria.

7.4 Updates, Amendments, and Corrections. Provide updates to a flood warning by issuing a flood statement per instructions in section 8.2.2. Amendments are not applicable to this product. WFOs will correct flood warnings for format and grammatical errors as required.

## **8. Flood Statement - Follow-up to Flood Warning For Forecast Points (FLS).**

**VTEC Phenomena Code: FL, Significance Code: W.** Flood statements contain supplemental information on previously issued flood warnings, such as updated observations and impact information.

8.1 Mission Connection. Flood statements help the NWS to meet its mission by updating information on threatening situations covered in previous flood warnings, thus helping to protect life and property.

### 8.2 Issuance Guidelines.

8.2.1 Creation Software. The RiverPro software in WHFS will be used.

8.2.2 Issuance Criteria. Flood statements will be issued to follow up flood warnings when:

- a. Information needs to be provided to update or supplement a previously issued flood warning; and/or
- b. The effective time changes in a previously issued flood warning (except if accompanied by a flood category increase - in that case, issue a flood warning); and/or
- c. Cancellation or expiration of a flood warning needs to be announced; and/or
- d. Observed flooding decreases to a lower category (e.g., moderate to minor) than was provided in the most recently issued flood warning/statement and a lower category than was forecast to be occurring at the time for the next product update.

8.2.3 Issuance Time. Flood statements are non-scheduled, event-driven products.

8.2.4 Valid Time. A flood warning for a forecast point being followed up in a flood statement will continue to be valid until the time indicated in **the event ending date/time group in the P-VTEC string and** the second bullet, or until it is cancelled by or omitted from a flood statement. If river/stream characteristics and/or hydrometeorological conditions make it impractical to specify when the event will end, **the event ending date/time group and the flood end date/time group are coded with ten zeros (000000T0000Z) and** “UNTIL FURTHER NOTICE” is used in the second bullet.

8.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as low as 6 hours for more rapidly changing situations. For flood statements announcing expiration or cancellation of a flood warning for forecast points, the product expiration time is not more than one half hour after the warning expiration or cancellation time.

### 8.3 Technical Description.

8.3.1 UGC Type. County codes should be used (Zones in Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

8.3.2 MND Broadcast Instruction Line. Not applicable to the flood statement.

8.3.3 MND Product Type Line. Use: “FLOOD STATEMENT.”

8.3.4 Content. A flood statement following up a flood warning for forecast points uses a segmented, bullet format. An optional general overview/synopsis section may be provided at the top of the product. The required segmented warning update information section begins with the first UGC line **followed immediately by a P-VTEC string.**

8.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following items:

- a. General Overview Headline - One or more headlines summarizing the type of products in effect, the action being taken, and the expected event duration (if known). Each overview headline starts and ends with three periods “...” (ellipses). A list of forecast points may appear below the headlines.
- b. General Synopsis - a brief, non-technical description of the flood situation. A tabular summary of rivers and forecast points covered in the product and/or a discussion of contributing hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.”. If a call-to-action statement is included, it should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

8.3.4.2 Segmented Flood Statement Information Section. Information will be divided into one or more segments. Each forecast point will have its own segment (segmentation by forecast point). **This provides for straightforward application of VTEC action codes (e.g., CAN, CON) in subsequent issuances for each forecast point and maximizes the meaning of values in the date/time group in the H-VTEC string.** A county UGC may be associated with more than one segment. If more than one type of segment is needed (e.g., cancellation plus continuation) in a product, the segments should be further ordered **by VTEC action code** as follows:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. Extensions (EXT)
- e. Continuations (CON)

However, the order for individual segments may deviate from this hierarchy to provide information in a way that makes the most sense geographically (e.g., grouped by county, downstream

order, forecast basin). Note: in flood statements following up flood warnings for forecast points, there will be no segments for new issuances (NEW), expansions in area (EXA), and extensions in both time and area (EXB). Also note: the COR action code will only be used in flood statements to correct previously issued flood statements - corrections to flood warnings will be handled by flood warnings.

In a flood statement following up a flood warning for forecast points, segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/time stamp as shown in Figure 10. If the flood severity code “s” in the H-VTEC string is unknown, enter “U”. Use zeros for any unknown date/time group.
- b. Headline summarizing content of the segment (optional for cancellation, expiration, and continuation segments).
- c. Action lead-in phrase such as “THE FLOOD WARNING CONTINUES FOR” (other action lead-in phrases are provided in Figure 10), followed on the next line (indented) by the river/stream name and location (forecast point) name. After the river/stream and location names, the following bulleted warning information, delimited by asterisks (\*), will be provided for the forecast point (bullets may be longer than six lines if necessary):
  - (1) For extensions and continuations: FROM/TO or UNTIL information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the flooding is to begin within three hours of product issuance, only the UNTIL information is provided. If the event ending time cannot be specified, use FURTHER NOTICE in place of the time. Use general date/time phrases such as MONDAY MORNING instead of specific date/times.
  - (2) AT followed by the time of observation and the current stage/flow.
  - (3) If flood category information is available, one or both of the following as applicable: description of category of current flooding, if flooding is already occurring, and description of the category of expected flooding (this information may be omitted for cancellations and expirations).
  - (4) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).
  - (5) Forecast information - e.g., time when river/stream reached, will reach, or fell below flood stage/flow; forecast crest/peak flow and time/day when expected; time when river/stream will fall below flood stage/flow; and other relevant forecast information.

- (6) (Optional) Description of the known impacts of flooding at given stages (or flows) within the expected range of forecast values.
- (7) (Optional) Flood history information.

Observed and forecast data in tabular format may be presented at the end of each segment, or at the end of the product after the last segment.

8.3.5 Format. The generic format is shown below in Figure 10:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx
```

```
FLOOD STATEMENT
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

*The following overview headline/synopsis section within the next brackets is optional:*

```
...THE FLOOD WARNING CONTINUES <(optional) UNTIL <time/day phrase> 1> FOR
THE FOLLOWING <RIVER(S) or STREAM(S)> IN <geographic area>...
```

```
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
```

```
.
```

```
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
```

```
(optional:) AFFECTING THE FOLLOWING COUNTIES IN <state>...<county #1>...
<county #2> AND <county #n>
```

*and/or*

```
...THE FLOOD WARNING <IS CANCELLED or HAS EXPIRED> FOR THE FOLLOWING
<RIVER(S) or STREAM(S)> IN <geographic area>...
```

```
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
```

```
.
```

```
<river/stream> <proximity term> <location> (optional:) AFFECTING
<county #1>...<county #2> AND <county #n> <COUNTY or COUNTIES>
```

```
(optional:) AFFECTING THE FOLLOWING COUNTIES IN <state>...<county #1>...
<county #2> AND <county #n>
```

```
.<General synopsis>
```

```
(optional:) <call-to-action>
```

```
(optional:) ADDITIONAL INFORMATION IS AVAILABLE AT <Web site URL>
```

```
(optional:) THE NEXT STATEMENT WILL BE ISSUED <time/day phrase>
```

*(Include one or more of the following segments in the indicated order<sup>2</sup>:)*

```
stC001-005>015-ddhhmm-
/k.COR.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>

$$
```

*or / and (for cancellations):*

```
stC001-005>015-ddhhmm-
/k.CAN.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD WARNING IS CANCELLED FOR
  <river/stream name> <proximity term- e.g., AT> <location>
* AT <time>5 <day> THE <STAGE/FLOW>6 WAS... <stage/flow>
* <other stage/flow type>7 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FELL BELOW FLOOD <STAGE/FLOW> AT <time> <day> (optional)
* FELL BELOW <other stage/flow type> AT <time> <day> (optional)
* FORECAST... <sentence or paragraph with forecast information>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for expirations):*

```
stC001-005>015-ddhhmm-
/k.EXP.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD WARNING HAS EXPIRED FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* AT <time>5 <day> THE LATEST <STAGE/FLOW>6 IS... <stage/flow>
* <other stage/flow type>7 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FELL BELOW FLOOD <STAGE/FLOW> AT <time> <day> (optional)
* FELL BELOW <other stage/flow type> AT <time> <day> (optional)
* FORECAST... <sentence or paragraph with forecast information>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for extensions in time)*

```
stC001-005>015-ddhhmm-
/k.EXT.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING EXTENDED UNTIL <<time/day phrase>1 or FURTHER NOTICE>...9

THE FLOOD WARNING CONTINUES FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase>1 TO <<time/day phrase>1 or UNTIL FURTHER
  NOTICE>> or <UNTIL <time/day phrase>1 or FURTHER NOTICE>
* AT <time>4 <day> THE <STAGE/FLOW> WAS...<stage/flow>5
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST8
* <other stage/flow type>7 IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with forecast information such as when
  flood stage will be reached, forecast crest/time, and time for fall below
  flood stage. If second bullet uses "further notice," include best estimate
  of flood duration and briefly explain why it can't be specified exactly.>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (when Event Ending Date/Time is being forecast for the first time)<sup>10</sup>:*

```
stC001-005>015-ddhhmm-
/k.EXT.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

...FLOOD WARNING NOW EXPECTED TO END <time/day phrase>1...

THE FLOOD WARNING CONTINUES FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase>1 TO <time/day phrase>1> or <UNTIL <time/day
  phrase>1>
* AT <time/>5 <day> THE <STAGE/FLOW>6 WAS...<stage/flow>
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST8
* <other stage/flow type>7 IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with forecast information such as when
  flood stage will be reached, forecast crest/time, and time for fall below
  flood stage/flow.>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for continuations):*

```
stC001-005>015-ddhhmm-
/k.CON.cccc.FL.W3.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.s4.ic.yymmddThhnnZB.yymmddThhnnZC.yymmddThhnnZE.fr/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD WARNING CONTINUES FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase>1 TO <<time/day phrase>1 or UNTIL FURTHER
  NOTICE>> or <UNTIL <time/day phrase>1 or FURTHER NOTICE>
* AT <time/>5 <day> THE <STAGE/FLOW>6 WAS...<stage/flow>
* <category> FLOODING IS OCCURRING AND <category> FLOODING IS FORECAST8
* <other stage/flow type>7 IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with forecast information such as when
  flood stage will be reached, forecast crest/time, and time for fall below
  flood stage. If second bullet uses "further notice," include best estimate
  of flood duration and briefly explain why it can't be specified exactly.>
* <description of impacts at given stage(s)/flow(s)> (optional)
* <flood history information> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$

(For each additional forecast point (if any), repeat the above in a separate segment)
```

```
&& TABULAR FORECAST INFORMATION (optional - for entire product)
<tabular observed/forecast values for entire product> (optional)
```

```
$$
```

```
<Name/Initials/Forecaster ID> (optional)
```

Note (1): <time/day phrase> stands for time/day phrases used in long duration watches (see NWSI 10-1701) - i.e., for beyond 12 hours - phrases such as MONDAY MORNING, TUESDAY AFTERNOON.

Note (2): New issuances (**NEW**) will be handled by the flood warning product (FLW - see section 7).

Note (3): The significance code for this product is "W" because the flood statement provides supplemental information on a previously issued (and still active) flood warning product (see NWSI 10-1703, section 2.1.5).

Note (4): "U" is entered for Flood Severity code "s" if the forecast flood category is unknown.

Note (5): Where <time> stands alone as a variable, the format is **hhmm am/pm time\_zone**.

Note (6): "Stage/flow" means either stage and/or discharge values may be used.

Note (7): Examples of "other stage/flow type:" CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

Note (8): Include one or both observed/forecast category phrases if applicable and flood categories are available.

Note (9): Headline is optional, but recommended for significant extensions, with interpretation of "significant" determined on case by case basis.

Note (10): When the ending date and time is being forecast for the first time for a long-duration flood for which previous FLS products used "UNTIL FURTHER NOTICE," a special extension (**EXT**) segment is issued. After this special extension segment is issued, the next product reverts to using a continuation (**CON**) segment until the flood ends, unless the event ending time changes again, which would require another extension segment. **The event tracking number remains unchanged during this process.**

**Figure 10.** Generic format for flood statement following up a flood warning for forecast points.

A flood statement following up a flood warning for forecast points with cancellation, expiration, extension, or continuation (and correction) segments may also include segments with information



on forecast points which are below flood warning criteria. Inclusion of such segments provides a complete set of forecast and warning information for a series of points along a river reach, regardless of whether they are in flood or not. **Segments for forecast points which are below flood warning criteria will include VTEC strings.** The generic format for such segments was shown previously in Figure 9 (section 7.3.5).

8.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. WFOs will correct flood statements for format and grammatical errors as required.

**9. Areal Flood Warning (FLW). VTEC Phenomena Code: FA, Significance Code: W.** Areal flood warnings are issued for any high flow, overflow, or inundation in a defined area such as a portion of a state, a group of counties, or an area along a river or stream which threaten lives and property and are not appropriately covered by flash flood warnings or flood warnings for forecast points.

9.1 Mission Connection. Flood warnings help the NWS to meet its mission by providing advance notice of imminent or occurring flooding. This gives users time to initiate mitigation actions such as evacuation, removal of goods and belongings, alteration of reservoir releases, and activation of diversion works, thus helping to protect life and property.

9.2 Issuance Guidelines.

9.2.1 Creation Software. Areal flood warnings will be created using the WarnGen application.

9.2.2 Issuance Criteria. Areal flood warnings will be issued for the WFO's CWA when:

- a. Flood monitoring and forecasting tools indicate flooding is likely over an area which cannot be quantified by a flood warning for forecast points; and/or
- b. Flooding is reported over a wide area which cannot be quantified by a flood warning for forecast points; and/or
- c. A previously issued areal flood warning needs to be extended in time; or
- d. Flooding is imminent or occurring in one or more additional counties (zones - Alaska) currently not under a valid flood warning (**no EXA/EXB action codes used**). Note: a new warning may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).

9.2.3 Issuance Time. Flood warnings are non-scheduled, event-driven products.

9.2.4 Valid Time. Areal flood warnings will be valid until the time when the flooding (requiring actions to protect lives and property) is expected to end, as indicated **in the Event Ending Date/Time element in the P-VTEC string** and the second bullet, or until the product is cancelled by a flood statement.

9.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation.

### 9.3 Technical Description.

9.3.1 UGC Type. County codes should be used (Zone for Alaska).

9.3.2 MND Broadcast Instruction Line. Use either: “BULLETIN - EAS ACTIVATION REQUESTED” or “BULLETIN - IMMEDIATE BROADCAST REQUESTED” depending on the urgency of the hydrologic situation, regional policies, and user requirements.

9.3.3 MND Product Type Line. Use: “FLOOD WARNING.”

9.3.4 Content. The areal flood warning product uses a segmented, bullet format. An optional general overview/synopsis section may be provided at the top of the product. The required segmented warning information section begins with the first UGC line followed immediately by a P-VTEC string.

9.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following:

- a. General Overview Headline - One or more headlines summarizing the current flood situation, affected locations/areas, and the expected duration (if known). Each overview headline starts and ends with three periods “...” (ellipses).
- b. General Synopsis - brief description of the flood situation. A discussion of associated hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.”.

9.3.4.2 Segmented Warning Information Section. Information in a product will be divided into one or more segments. Correction segments (COR) will appear first before any new issuance segments. Note: there are no extensions in area (EXA), extensions in both time and area (EXB), and continuation (CON) segments in areal flood warnings (continuations are handled in the flood statement [FLS] product and new areas are covered in separate new issuance FLW products).

Each segment of an areal flood warning will include the following:

- a. UGC line, P-VTEC string, H-VTEC string, and date/time stamp as shown in Figure 11. In the hydrologic VTEC, use zeros for the NWSLI and flood severity code “s.” The available entries for immediate cause code “ic” are ER (excessive rainfall), SM (snowmelt), RS (rain and snowmelt), IJ (ice jam), and IC (Rain and/or snowmelt and/or ice jam). Use zeros for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status “fr.”

- b. The action lead-in phrase THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A. After this lead-in, there will be three to four bullets delimited by asterisks (\*) providing the following information (bullets may be longer than six lines):
- (1) First bullet - FLOOD WARNING FOR, optionally followed by the phrase URBAN AREAS AND SMALL STREAMS IN or SMALL STREAMS IN, followed by a term describing the geographic area covered.
  - (2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times (see Figure 11 for details).
  - (3) Third bullet - Discussion of the warning basis.
  - (4) Fourth bullet - (optional) Discussion of expected impacts.
- c. Call-to-action statement - should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.
- d. Latitude/longitude polygon coordinates defining the warning area.

9.3.5 Format. The generic format for areal flood warnings is shown below in Figure 11.

```
WGA1A2ii cccc ddhhmm (BBB)
FLWxxx
```

```
BULLETIN - EAS ACTIVATION (or IMMEDIATE BROADCAST) REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional) ...General overview headline...>
```

```
<(optional) .General synopsis of flood situation>
```

*(Include one of the types of following segments:)*

*For corrections:*

```
[ stC001-005>015-ddhhmm-
/k.COR.cccc.FA.W.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
<Appropriate text as shown in the warning issuance/extension segment below>
$$ ]
```

*or (for new issuances and extensions in time):*

```
[ stC001-005>015-ddhhmm-
/k.<NEW or EXT>.cccc.FA.W.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy ]
```

```

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLOOD WARNING FOR <(optional) URBAN AREAS AND SMALL STREAMS IN or SMALL
  STREAMS IN>
  <county #1, with appropriate geographic modifier(s)> 1
  <county #2, with appropriate geographic modifier(s)>
  .
  .
  <county #n, with appropriate geographic modifier(s)>
  (optional) <INCLUDING <THE CITIES OF> location...location>

* UNTIL hhmm am/pm time_zone 2

* <warning basis>

* (optional) <expected impacts>

<call-to-action statement>

LAT...LON  nnnn nnnn

$$

```

<Name/Initials/Forecaster ID> (optional)

Note (1): <county #, with appropriate geographic modifier(s)> may be any type of county-based area – a county name, county name with a directional modifier (e.g., SOUTHERN CASS COUNTY IN NEBRASKA), or river reach (e.g., THE PEND OREILLE RIVER IN PEND OREILLE COUNTY IN NORTHEAST WASHINGTON).

Note (2): It is optional to include a day name after the time when needed.

**Figure 11.** Generic format for areal flood warnings.

9.4 Updates, Amendments, and Corrections. Provide updates by issuing a flood statement per instructions in section 10.2.2. Amendments are not applicable to this product. WFOs will correct areal flood warnings for significant grammatical, format, or dissemination code errors, or for counties/zones either omitted or erroneously added to a warning. Corrected warnings will have the same time in the MND header **and the same ETN in the VTEC string** as the original warning. WFOs should issue flood statements to notify users when erroneous counties/zones were removed from original warnings (either in the UGC code or the body of the warning).

**10. Flood Statement - Follow-up to Areal Flood Warning (FLS). VTEC Phenomena Code: FA, Significance Code: W.** This type of flood statement contains supplemental information on previously issued areal flood warnings, such as updated observations and impact information.

10.1 Mission Connection. Flood statements help the NWS to meet its mission by updating information on threatening situations covered in previous flood warnings, thus helping to protect life and property.

10.2 Issuance Guidelines.

10.2.1 Creation Software. The WarnGen application will be used.

10.2.2 Issuance Criteria. Flood statements will be issued to follow up areal flood warnings when:

- a. Information needs to be provided to update or supplement a previously issued areal flood warning, and/or
- b. Cancellation or expiration of all or part of a flood warning needs to be announced.

10.2.3 Issuance Time. Flood statements are non-scheduled, event-driven products.

10.2.4 Valid Time. An areal flood warning being followed up in a flood statement will continue to be valid until the time when the flooding is expected to end, as indicated in the second bullet and the event ending date/time element in the P-VTEC line, or until the product is cancelled by a subsequent flood statement.

10.2.5 Product Expiration Time. For flood statements providing follow-up information on an areal flood warning (i.e., extension or continuation), the product expiration time is either the same as the product expiration time for the referenced areal flood warning, or an appropriate period of time until the next update needs to be issued (typically 6 to 24 hours - depends on the current situation and hydrologic characteristics of the area). For flood statements announcing expiration or cancellation of an areal flood warning, the product expiration time is not more than ten minutes after the warning expiration or cancellation time.

### 10.3 Technical Description.

10.3.1 UGC Type. County codes should be used (Zones in Alaska).

10.3.2 MND Broadcast Instruction Line. Not applicable to the flood statement.

10.3.3 MND Product Type Line. Use: "FLOOD STATEMENT."

10.3.4 Content. The flood statement following up an areal flood warning uses a segmented, non-bulleted format. The required segmented warning information section begins with the first UGC line followed immediately by a VTEC string.

10.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following:

- a. General Overview Headline - One or more headlines summarizing the current flood situation, affected locations/areas, and the expected duration (if known). Each overview headline starts and ends with three periods "..." (ellipses).
- b. General Synopsis - a brief, non-technical description of the flood situation. A discussion of associated hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period "."

10.3.4.2 Segmented Flood Statement Information Section. Information in a flood statement following up an areal flood warning will be divided into one or more segments. If more than one type of segment is needed (e.g., cancellation plus continuation) in a given product, the segments should be further ordered by VTEC action code as follows:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. Continuations (CON)

Note - FLS products following up areal flood warnings will not have segments for new issuances (NEW) and extensions in time (EXT) - these actions are only used with the FLW identifier. For the situation when a multi-county areal flood warning needs to be cancelled for part of its original area and extended in time for the other part, issue a FLS using a single cancellation segment with the original ETN for the area being cancelled and then issue a separate areal FLW product announcing extension of the flood warning with the original ETN for the area being extended. Also note - the COR action code will only be used to correct previously issued flood statements - corrections to flood warnings will be handled by flood warnings.

Cancellation (CAN), expiration (EXP), and continuation (CON) segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, cities listing (optional), and date/time stamp as shown in Figure 12. In the H-VTEC, use zeros for the NWSLI and flood severity code "s." Use zeros for the start, crest, and end date/time groups and OO (double capital "O") for the flood record status "fr."
- b. Headline summarizing content of the segment.
- c. Brief post-event synopsis (for cancellation and expiration segments) or a description of the current hydrometeorological situation and expected impacts (for continuation segments). These may be one or more paragraphs in length.
- d. Call-to-action statement (for continuation segments). Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.
- e. Latitude/longitude polygon coordinates defining the warning area.

10.3.5 Format. The generic format for a flood statement following up an areal flood warning is shown below in Figure 12:

WGA<sub>1</sub>A<sub>2</sub>ii cccc ddhhmm (BBB)  
FLSxxx

FLOOD STATEMENT  
NATIONAL WEATHER SERVICE <city, state>  
hhmm am/pm time\_zone day mon dd yyyy

<(optional) ...General overview headline...>

<(optional) .General synopsis of flood situation>

*(Include one or more of the following segments in the indicated order:)*

*For corrections:*

```
stC001-005>015-ddhhmm-
/k.COR.cccc.FA.W1.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>

$$
```

*or / and (for cancellations):*

```
stC001-005>015-ddhhmm-
/k.CAN.cccc.FA.W1.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLOOD WARNING HAS BEEN CANCELLED FOR <(optional) URBAN AREAS AND
SMALL STREAMS IN or SMALL STREAMS IN> <geographic area2>...

<Brief post-event synopsis>

LAT...LON  nnnn nnnn

$$
```

*or / and (for expirations):*

```
stC001-005>015-ddhhmm-
/k.EXP.cccc.FA.W1.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLOOD WARNING HAS EXPIRED FOR <(optional) URBAN AREAS AND SMALL
STREAMS IN or SMALL STREAMS IN> <geographic area2>...

<Brief post-event synopsis>

LAT...LON  nnnn nnnn

$$
```

*or / and (for continuations):*

```
stC001-005>015-ddhhmm-
/k.CON.cccc.FA.W1.####.yymmddThhnnZE-yymmddThhnnZE/
/00000.0.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLOOD WARNING REMAINS IN EFFECT UNTIL hhmm am/pm time_zone3 FOR
<(optional) URBAN AREAS AND SMALL STREAMS IN or SMALL STREAMS IN>
<geographic area2>...

<current hydrometeorological situation and expected impacts>

<call-to-action statement>

LAT...LON  nnnn nnnn

$$

<Name/Initials/Forecaster ID> (optional)
_____
```

Note (1): The significance code for this product is “W” because the flood statement provides supplemental information on a previously issued (and still active) flood warning product (see NWSI 10-1703, section 2.1.5).

Note (2): <geographic area> may be any type of county-based area – one or more county names, one or more county names with a directional modifiers and state names (e.g., SOUTHERN CASS COUNTY IN NEBRASKA), or a description of a river reach (e.g., THE PEND OREILLE RIVER IN PEND OREILLE COUNTY IN NORTHEAST WASHINGTON).

Note (3): It is optional to include a day name after the time when needed.

**Figure 12.** Generic format for flood statement following up an areal flood warning.

10.4 Updates, Amendments, and Corrections. Provide additional updates to current areal flood warnings by issuing flood statements. Amendments are not applicable to this product. WFOs will correct flood statements for format and grammatical errors as required.

**11. Flood Statement - Areal Advisories (FLS). VTEC Phenomena Code: FA, Significance Code: Y.** Areal advisories issued under the flood statement identifier - i.e., urban and small stream flood advisories, arroyo and small stream flood advisories, small stream flood advisories, flood advisories, and hydrologic advisories - provide information on elevated river/stream flows or ponding of water in urban or other areas, when such events warrant notification of the public in a product less urgent than a warning.

11.1 Mission Connection. This product helps the NWS to meet its mission by providing notification on unusual hydrologic activity, thus helping to protect life and property.

11.2 Issuance Guidelines.

11.2.1 Creation Software. Areal advisories will be created with the WarnGen application.

11.2.2 Issuance Criteria. Areal advisories will be issued for a WFO’s CWA when:

- a. Elevated stream flow or ponding of water occurs or will occur which warrants public notification.



- b. An advisory needs to be issued for one or more additional counties (zones - Alaska, Guam, and American Samoa) currently not under a valid advisory (no expansions in area [EXA] or extensions in both time and area [EXB] allowed). Note: a new advisory may be issued for an already covered county if deemed necessary by a forecaster (e.g., for different area of a large county).
- c. Updated hydrometeorological information needs to be provided on an existing advisory.

11.2.3 Issuance Time. Areal advisories issued under the flood statement identifier are non-scheduled, event-driven products.

11.2.4 Valid Time. This product will be valid until the time when the hydrologic conditions of concern are expected to end, as indicated in the headline, or until the product is cancelled or updated by another advisory.

11.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is the same as the valid time in the headline and is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation, type of advisory, and characteristics of the area of concern. When announcing expiration or cancellation of an advisory, the product expiration time is not more than ten minutes after the warning expiration or cancellation time.

### 11.3 Technical Description.

11.3.1 UGC Type. County codes should be used (Zone for Alaska, Guam, and American Samoa).

11.3.2 MND Broadcast Instruction Line. Not applicable to this product.

11.3.3 MND Product Type Line. Use: "FLOOD ADVISORY."

11.3.4 Content. An optional general overview/synopsis section may be included at the top of the product. Areal advisories use a segmented, bullet format (except for cancellations, expirations, and continuations) which is similar to areal flood warnings (see Figure 13).

11.3.4.1 General Overview/Synopsis Section. This optional section contains at least one of the following:

- a. General Overview Headline - One or more headlines summarizing the current situation, affected locations/areas, and the expected duration. Each overview headline starts and ends with three periods "..." (ellipses).
- b. General Synopsis - a brief, non-technical description of the current hydrometeorological situation and contributing factors. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period ".".

11.3.4.2 Segmented Advisory Information Section. Information in an areal advisory issued under the flood statement identifier will be divided into one or more segments. If more than one type of segment is needed, they will be provided in the following order:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. Continuations (CON)

New (NEW) and extension in time (EXT) segments will be issued in stand-alone products and will not be mixed with cancellation, expiration, or continuation segments. For the situation when a multi-county areal flood advisory needs to be cancelled for part of its original area and extended in time for the other part, issue an areal advisory product using a single cancellation segment **with the original ETN** for the area being cancelled and then issue a separate areal advisory product announcing extension of the advisory **with the original ETN** for the area being extended.

New issuance and extension in time segments will include:

- a. UGC line, **P-VTEC string, H-VTEC string**, and date/time stamp as shown in Figure 13. **In the H-VTEC, use zeros for the NWSLI and “N” for flood severity code “s” to indicate advisory-level flooding. Use zeros for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status “fr.”**
- b. An action lead-in phrase - “THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A” (for new issuance) or THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE” (for extension in time), followed by three to four bullets delimited by asterisks (\*) providing the following information (bullets may be longer than six lines):
  - (1) First bullet - <type of advisory>; followed by the optional phrase “FOR <hydrologic condition>;” followed by a preposition - i.e., FOR, OF, AT, IN, or ON, followed by the streams or geographic area covered. Types of advisories are: URBAN AND SMALL STREAM FLOOD ADVISORY, ARROYO AND SMALL STREAM FLOOD ADVISORY, SMALL STREAM FLOOD ADVISORY, FLOOD ADVISORY, and HYDROLOGIC ADVISORY. Examples of hydrologic conditions include ICE JAM FLOODING, RAPID RISES, or MINOR FLOODING IN POOR DRAINAGE AREAS.
  - (2) Second bullet - phrase integrating the event beginning (when appropriate) and event ending times.
  - (3) Third bullet - basis for the advisory
  - (4) Fourth bullet (optional) - expected impacts of the elevated flow situation.

- c. A call-to-action statement. Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

Cancellation, expiration, and continuation segments will include:

- a. UGC line, **P-VTEC string**, **H-VTEC string**, counties listing, cities listing (optional), and date/time stamp as shown in Figure 13. **In the H-VTEC, use zeros for the NWSLI and “N” for flood severity code “s” to indicate advisory-level flooding. Use zeros for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status “fr.”**
- b. Headline summarizing content of the segment.
- c. Brief post-event synopsis (for cancellation and expiration segments) or a description of the current hydrometeorological situation and expected impacts (for continuation segments). These may be one or more paragraphs in length.
- d. Call-to-action statement (for continuations, focusing on avoiding flood danger).
- e. Latitude/longitude polygon coordinates defining the advisory area.

11.3.5 Format. The generic format for an areal flood advisory is shown below in Figure 13:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx
```

```
FLOOD ADVISORY
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional) ...General overview headline...>
```

```
<(optional) .General synopsis of elevated flow situation>
```

*(Include one or more of the following segments in the indicated order:)*

*For corrections:*

```
stC001-005>015-ddhhmm-
/k.COR.cccc.FA.Y.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text as shown in one of the segment types below>

$$
```

*or / and (for cancellations):*

```
stC001-005>015-ddhhmm-
/k.CAN.cccc.FA.Y.####.yyymmddThhnnZB-yyymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE <type of advisory> 1 <(optional) FOR <hydrologic condition> 2> HAS
BEEN CANCELLED FOR <geographic area>...
```

```
<Brief post-event synopsis>
```

```
LAT...LON  nnnn nnnn
```

```
$$
```

*or / and (for expirations):*

```
stC001-005>015-ddhhmm-
/k.EXP.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE <type of advisory> 1 <(optional) FOR <hydrologic condition> 2> HAS
EXPIRED FOR <geographic area>...
```

```
<Brief post-event synopsis>
```

```
LAT...LON  nnnn nnnn
```

```
$$
```

*or / and (for continuations):*

```
stC001-005>015-ddhhmm-
/k.CON.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy
```

```
...THE <type of advisory> 1 <(optional) FOR <hydrologic condition> 2> REMAINS
IN EFFECT UNTIL hhmm am/pm time_zone 4 FOR <geographic area>...
```

```
<current hydrometeorological situation and expected impacts>
```

```
<call-to-action statement>
```

```
LAT...LON  nnnn nnnn
```

```
$$
```

*or (for new issuances):*

```
stC001-005>015-ddhhmm-
/k.NEW.cccc.FA.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy
```

```
THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED <A or AN>
```

```
* <type of advisory> 1 <(optional) FOR <hydrologic condition> 2> <FOR, OF,
AT, IN, or ON>
<county #1, with appropriate geographic modifier(s) 3>
<county #2, with appropriate geographic modifier(s)>
.
<county #n, with appropriate geographic modifier(s)>
(optional) <INCLUDING <THE CITIES OF> location...location>
```

```
* UNTIL hhmm am/pm time_zone 4
* <basis for advisory>
* (optional) <expected impacts>
<call-to-action statement>
LAT...LON  nnnn nnnn
$$
```

*or (for extensions in time):*

```
stC001-005>015-ddhhmm-
/k.EXT.cccc.FA.Y.####.yymmddThhnnZE-yymmddThhnnZE/
/00000.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE

* <type of advisory> 1 <(optional) FOR <hydrologic condition> 2> <FOR, OF,
  AT, IN, or ON>
  <county #1, with appropriate geographic modifier(s) 3>
  <county #2, with appropriate geographic modifier(s)>
  .
  <county #n, with appropriate geographic modifier(s)>
* UNTIL hhmm am/pm time_zone 4
* <basis for advisory>
* (optional) <expected impacts>
<call-to-action statement>
LAT...LON  nnnn nnnn
$$
```

<(optional) Name/Initials/Forecaster ID>  
\_\_\_\_\_

Note (1): types of areal advisories include: URBAN AND SMALL STREAM FLOOD ADVISORY, ARROYO AND SMALL STREAM FLOOD ADVISORY, SMALL STREAM FLOOD ADVISORY, FLOOD ADVISORY, and HYDROLOGIC ADVISORY.

Note (2): Examples of hydrologic conditions that could be used here include: ICE JAM FLOODING, RAPID RISES, and MINOR FLOODING IN POOR DRAINAGE AREAS.

Note (3): <county #, with appropriate geographic modifier(s)> may be any type of county-based area – a county name, county name with a directional modifier (e.g., EAST PIMA COUNTY IN ARIZONA), or river reach (e.g., THE AROOSTOOK AND SAINT JOHN RIVERS IN AROOSTOOK COUNTY IN NORTHERN MAINE).

Note (4): It is optional to include a day name after the time when needed.

**Figure 13.** Generic format for an areal advisory issued under the flood statement identifier.

**11.4 Updates, Amendments, and Corrections.** Provide updates to current areal advisories by issuing a follow-up flood statement **with the same phenomena/significance codes and ETN**. Amendments are not applicable to this product. WFOs will correct initial issuances of areal flood advisories for significant grammatical, format, or dissemination code errors, or for

counties/zones either omitted or erroneously added to a warning. These corrected advisories will have the same time in the MND header **and the same ETN in the VTEC string** as the initial advisory. WFOs should issue follow-up flood statements to notify users when erroneous counties/zones were removed from initial areal flood advisories (either in the UGC code or the body of the warning).

**12. Flood Statement - Flood Advisory for Forecast Points (FLS). VTEC Phenomena Code: FL, Significance Code: Y.** Flood advisories for forecast points provide information on elevated river/stream flows as indexed by observations and/or forecasts at specific locations, when such events warrant notification of the public in a product less urgent than a warning.

12.1 Mission Connection. This product helps the NWS to meet its mission by providing notification on unusual hydrologic activity, thus helping to protect life and property.

12.2 Issuance Guidelines.

12.2.1 Creation Software. RiverPro in the WHFS will be used.

12.2.2 Issuance Criteria. Flood advisories will be issued for forecast points in a HSA when:

- a. Elevated stream flow warranting public notification occurs or is expected to occur at one or more locations. Flood advisories should not be issued for rivers and streams which are above flood stage or currently expected to exceed flood stage.
- b. One or more forecast points are already covered by an existing advisory, but an advisory needs to be issued for additional forecast points. In this case, the initial issuance for the new points should be a product which is a separate advisory from any product with updated information for the other points.
- c. Updated hydrometeorological information needs to be provided on a previously issued advisory. Forecast points covered in more than one initial advisory issuance may be combined into a single follow-up product.

12.2.3 Issuance Time. Flood advisories issued under the flood statement identifier are non-scheduled, event-driven products.

12.2.4 Valid Time. This product will be valid until the time when the elevated streamflow is expected to no longer be of concern, as indicated in the headline, or until the product is cancelled or updated by another advisory.

12.2.5 Product Expiration Time. The product expiration time (at the end of the UGC line) is the same as the valid time in the headline and is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation and characteristics of the area of concern. When announcing expiration or cancellation of a flood advisory, the product expiration time is not more than one half hour after the warning expiration or cancellation time.

### 12.3 Technical Description.

12.3.1 UGC Type. County codes should be used (Zone for Alaska). Include UGCs for all areas which use the forecast point as an index for flooding problems.

12.3.2 MND Broadcast Instruction Line. Not applicable to this product.

12.3.3 MND Product Type Line. Use: “FLOOD ADVISORY.”

12.3.4 Content. Flood advisories for forecast points use a segmented, bullet format which is similar to flood warnings for forecast points (see Figure 14).

12.3.4.1 General Overview/Synopsis Section. This optional section has one or both of the following:

- a. General Overview Headline - One or more headlines summarizing the current elevated streamflow situation, affected locations/areas, and the expected duration. Each overview headline starts and ends with three periods “...” (ellipses).
- b. General Synopsis - a brief, non-technical description of the elevated streamflow situation. A discussion of the associated hydrometeorological factors may be provided. This synopsis is free format and may consist of several paragraphs, but the first line of the first paragraph will always be preceded by a period “.”. If a call-to-action statement is included, it should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

12.3.4.2 Segmented Advisory Information Section. A flood advisory for forecast points will be divided into one or more segments, each segment containing information on a forecast point. If more than one type of segment is needed, they will be provided in the following order:

- a. Corrections (COR)
- b. Cancellations (CAN)
- c. Expirations (EXP)
- d. Continuations (CON)

However, the order for individual segments may deviate from this hierarchy to group information in a way that makes the most sense geographically (e.g., by county, downstream order, forecast basin). New issuance (NEW) and extension in time (EXT) segments will be issued in stand-alone products and will not mixed with cancellation, expiration, or continuation segments

New issuance, extension in time, and continuation segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing (optional), and date/ time stamp as shown in Figure 14. In the H-VTEC, enter the appropriate NWSLI and “N” for flood severity code “s” to indicate advisory-level flooding. Use zeros for the Flood Begin, Flood Crest, and Flood End Date/Time groups and OO (double capital “O”) for the flood record status “fr.”

- b. Optional headline summarizing content of the segment.
- c. Action lead-in phrase - “THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A (skip to next line) \* FLOOD ADVISORY FOR” (for new issuances); THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE (skip to next line) \* FLOOD ADVISORY FOR” (for extensions in time); or “THE FLOOD ADVISORY CONTINUES FOR (for continuations);” followed on the next line (indented) by the river/stream name and location (forecast point) name. After the river/stream and location names, the following bulleted advisory information, delimited by asterisks (\*), will be provided for the forecast point (bullets may be longer than six lines if necessary):
  - (1) For extensions in time and continuations: FROM/TO or UNTIL information, obtained from the Event Beginning and Event Ending Date/Times used in the P-VTEC string. If the flooding has already begun, only provide the UNTIL information. Use specific date/times in standard format.
  - (2) AT followed by the time of observation and the current stage/flow.
  - (3) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).
  - (4) Forecast information - e.g., time when river/stream will reach its crest.
  - (5) (Optional) Description of the known impacts of flooding at given stages (or flows) within the expected range of forecast values.

Observed and forecast data in tabular format may be presented at the end of each segment, or at the end of the product after the last segment.

Cancellation and expiration segments will include:

- a. UGC line, P-VTEC string, H-VTEC string, counties listing, and date/time stamp as shown in Figure 14. In the H-VTEC, enter the appropriate NWSLI and “N” for the flood severity code “s” to indicate an advisory-level flooding. Use zeros for the start, crest, and end date/time groups and OO (double capital “O”) for the flood record status “fr.”
- b. Optional headline summarizing content of the segment.
- c. Action lead-in phrase - “THE FLOOD ADVISORY IS CANCELLED FOR ( for cancellations),” or “THE FLOOD ADVISORY HAS EXPIRED FOR (for expirations);” followed on the next line (indented) by the river/stream name and location (forecast point) name. After the river/stream and location names, the following bulleted advisory information, delimited by asterisks (\*), will be provided for the forecast point (bullets may be longer than six lines if necessary):



- (1) AT followed by the time of observation and the current stage/flow.
- (2) Flood stage/flow at the forecast point (other stages such as caution stage may also be listed in separate bullets).
- (3) Forecast information such as a brief post-event synopsis.
- (4) (Optional) Description of the known impacts of flooding at given stages (or flows) within the expected range of forecast values.

12.3.5 Format. The generic format for a flood advisory for forecast points is shown below in Figure 14:

```
WGA1A2ii cccc ddhhmm (BBB)
FLSxxx
```

```
FLOOD ADVISORY
NATIONAL WEATHER SERVICE <city, state>
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional) ...General overview headline...>
```

```
<(optional) .General synopsis of elevated flow situation>
```

*(Include one or more of the following segments in the indicated order:)*

*For corrections:*

```
stC001-005>015-ddhhmm-
/k.COR.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

```
<Appropriate text as shown in one of the segment types below>
```

```
$$
```

*or / and (for cancellations):*

```
stC001-005>015-ddhhmm-
/k.CAN.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional)...Headline...>
```

```
THE FLOOD ADVISORY IS CANCELLED FOR
```

```
<river/stream name> <proximity term - e.g., AT> <location>
```

```
* AT <time> 2 <day> THE <STAGE/FLOW> WAS... <stage/flow> 3
```

```
* <other stage/flow type> 4 <STAGE/FLOW> IS... <stage/flow> (optional)
```

```
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
```

```
* FORECAST... <brief post-event synopsis> (optional)
```

```
* <description of impacts at given stage(s)/flow(s)> (optional)
```

```
&& (optional)
```

```
<optional tabular observed/forecast values for segment>
```

```
$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for expirations):*

```
stC001-005>015-ddhhmm-
/k.EXP.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD ADVISORY HAS EXPIRED FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* AT <time>2 <day> THE LATEST <STAGE/FLOW> IS... <stage/flow>3
* <other stage/flow type>4 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST... <brief post-event synopsis> (optional)
* <description of impacts at given stage(s)/flow(s)> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or / and (for continuations):*

```
stC001-005>015-ddhhmm-
/k.CON.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE FLOOD ADVISORY CONTINUES FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase>1 TO <time/day phrase>> or <UNTIL <time/day
  phrase>
* AT <time/>2 <day> THE <STAGE/FLOW> WAS...<stage/flow>3
* <other stage/flow type>4 IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with forecast information such as
  magnitude and time of the crest.>
* <description of impacts at given stage(s)/flow(s)> (optional)

&& (optional)
<optional tabular observed/forecast values for segment>

$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or (for new issuances)*

```
stC001-005>015-ddhhmm-
/k.NEW.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
hhmm am/pm time_zone day mon dd yyyy

<(optional)...Headline...>

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A
* FLOOD ADVISORY FOR
  <river/stream name> <proximity term - e.g., AT> <location>
* <FROM <time/day phrase>1 TO <time/day phrase>> or UNTIL <time/day phrase>
```

```
* AT <time> 2 <day> THE <STAGE/FLOW> WAS...<stage/flow> 3
* <other stage/flow type> 4 <STAGE/FLOW> IS... <stage/flow> (optional)
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
* FORECAST...<One or more sentences with forecast information such as
  magnitude and time of the crest.>
* <description of impacts at given stage(s)/flow(s)> (optional)
```

```
&& (optional)
```

```
<optional tabular observed/forecast values for segment>
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

*or (for extensions in time)*

```
stC001-005>015-ddhhmm-
```

```
/k.EXT.cccc.FL.Y.####.yymmddThhnnZB-yymmddThhnnZE/
```

```
/nwsli.N.ic.000000T0000Z.000000T0000Z.000000T0000Z.OO/
```

```
hhmm am/pm time_zone day mon dd yyyy
```

```
<(optional)...Headline...>
```

```
THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE
```

```
* FLOOD ADVISORY FOR
```

```
  <river/stream name> <proximity term - e.g., AT> <location>
```

```
* <FROM <time/day phrase> 1 TO <time/day phrase>> or UNTIL <time/day phrase>
```

```
* AT <time> 2 <day> THE <STAGE/FLOW> WAS...<stage/flow> 3
```

```
* <other stage/flow type> 4 IS... <stage/flow> (optional)
```

```
* FLOOD <STAGE/FLOW> IS... <flood stage/flow>
```

```
* FORECAST...<One or more sentences with forecast information such as
  magnitude and time of the crest.>
```

```
* <description of impacts at given stage(s)/flow(s)> (optional)
```

```
&& (optional)
```

```
<optional tabular observed/forecast values for segment>
```

```
$$
```

*(For each additional forecast point (if any), repeat the above in a separate segment)*

```
&&
```

```
TABULAR FORECAST INFORMATION (optional)
```

```
<tabular observed/forecast values for entire product> (optional)
```

```
$$
```

```
<Name/Initials/Forecaster ID> (optional)
```

Note (1): The variable <time/day phrase> is a place holder for any of the standard headline time/day phrases used for NWS long duration warnings and advisories (e.g., 400 PM THIS AFTERNOON, 400 AM PST TUESDAY).

Note (2): Where <time> stands alone as a variable, the format is **hhmm am/pm time\_zone**.

Note (3): "Stage/flow" means either stage and/or discharge values may be used.

Note (4): Examples of "other stage/flow type:" CAUTION STAGE, ALERT STAGE, or MONITOR STAGE.

**Figure 14.** Generic format for a flood advisory for forecast points.

**12.4 Updates, Amendments, and Corrections.** Provide updates by issuing a new product. Amendments are not applicable to this product. WFOs will correct flood advisories for forecast points for format and grammatical errors as required.

**13. Hydrologic Statement (RVS).** The hydrologic statement provides hydrologic forecasts and related information in a format which meets the needs of partners and other users.

13.1 Mission Connection. The hydrologic statement helps the NWS meet its mission by providing hydrologic information in a format which can be easily read by users who do not have sophisticated decoding capabilities.

## 13.2 Issuance Guidelines.

13.2.1 Creation Software. Use RiverPro or other applications as appropriate.

13.2.2 Issuance Criteria. Issue this product when river forecasts have been prepared for the hydrologic service area, or to disseminate information on significant hydrologic conditions.

13.2.3 Issuance Time. Issue on schedules coordinated with users, or on an event basis when needed.

13.2.4 Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

## 13.3 Technical Description.

13.3.1 UGC Type. County codes should be used (Zone for Alaska).

13.3.2 MND Broadcast Instruction Line. Not applicable to the hydrologic statement.

13.3.3 MND Product Type Line. Use: "HYDROLOGIC STATEMENT."

13.3.4 Content. The hydrologic statement uses a non-segmented, non-bulleted format. Hydrologic statements typically include a headline identifying the area affected and narrative information and/or observations/forecasts of river stages, lake levels, and ice conditions.

13.3.5 Format. The generic format for hydrologic statements is shown in Figure 15 below:

```
FGA1A2ii cccc ddhhmm (BBB)
RVSxxx
stC001-005>015-ddhhmm-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

(optional) ...<Headline statement>...

(optional) <Narrative information>

&& (optional - if narrative info needs to be separated from tabular info)

(optional) <tabular observed and/or forecast information>

$$

<(optional) forecaster name/number>
```

**Figure 15.** Generic format for a Hydrologic Statement (RVS).

13.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**14. Hydrologic Summary (RVA).** The hydrologic summary provides hydrologic observations and related information in a format which meets the needs of users. This product may be used to disseminate information not included in the Hydrologic Statement or River and Lake Forecast Product.

14.1 Mission Connection. The hydrologic summary helps the NWS meet its mission by providing hydrologic information which can be used by users to assess antecedent conditions or the current status of rivers and reservoirs.

14.2 Issuance Guidelines.

14.2.1 Creation Software. Use RiverPro or other applications as appropriate.

14.2.2 Issuance Criteria. Issue hydrologic statements after data on rivers and reservoirs in the hydrologic service area have been collected and quality controlled.

14.2.3 Issuance Time. Issue on schedules coordinated with local users.

14.2.4 Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

14.3 Technical Description.

14.3.1 UGC Type. County codes should be used (Zone for Alaska).

14.3.2 MND Broadcast Instruction Line. Not applicable to the hydrologic summary.

14.3.3 MND Product Type Line. Use: "HYDROLOGIC SUMMARY."

14.3.4 Content. The hydrologic summary uses a non-segmented, non-bulleted format. Hydrologic summaries contain an optional headline and provide information such as observations of river stages, lake levels, precipitation data, or ice conditions.

14.3.5 Format. The generic format for hydrologic summaries is shown in Figure 16 below:

```
SRA1A2ii cccc ddhhmm (BBB)
RVAxxx
stC001-005>015-ddhhmm-

HYDROLOGIC SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<(optional) ...headline...>
```

```
<Tabular data>

$$

<(optional) forecaster name/number>
```

**Figure 16.** Generic format for Hydrologic Summaries (RVA).

14.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**15. River and Lake Forecast Product (RVD).** The river and lake forecast product provides hydrologic forecasts and observations in Standard Hydrometeorological Exchange Format (SHEF).

15.1 Mission Connection. The river and lake forecast product helps the NWS meet its mission by providing hydrologic forecasts and observations in a standardized format which allows ingest into a variety of computer applications operated by users.

15.2 Issuance Guidelines.

15.2.1 Creation Software. Generate the river and lake forecast product using RiverPro in the WHFS or other applications as appropriate.

15.2.2 Issuance Criteria. This product will be issued daily for daily forecast points. More frequent updates may be provided if needed.

15.2.3 Issuance Time. This product will be issued routinely on a schedule which meets the needs of partners and other users. The product can be issued as frequently as once per day, with updates as needed, or as infrequently as once per week.

15.2.4 Valid Time. This product will be valid from the time of release until updated.

15.3 Technical Description.

15.3.1 UGC Type. County codes should be used (Zone for Alaska).

15.3.2 MND Broadcast Instruction Line. Not applicable to the river and lake forecast product.

15.3.3 MND Product Type Line. Use: "DAILY RIVER AND LAKE SUMMARY."

15.3.4 Content. River and lake forecast products will include a table containing observed and forecast data in SHEF ".b" format, vertically aligned to maximize readability. Headers defining the field in each column will be provided in the following order:

- a. NWS Location Identifier;
- b. Station name;

- c. Flood stage (if applicable);
- d. Current stage or lake elevation;
- e. 24 hour change;
- f. 1 day forecast; and
- g. Additional data, such as 6 hourly or daily forecast information out to 7 days (optional).

Rows of data should be grouped by river basin, with the name of the river basin provided above each grouping. When multiple forecast points exist on the same river, the river name should only be provided once. An optional narrative may be included in the product.

15.3.5 Format. The generic format is shown in Figure 17 below:

```
FGA1A2ii cccc ddhhmm (BBB)
RVDxxx
stC001-005>015-ddhhmm-

DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<SHEF-encoded hydrologic forecasts>

$$

<(optional) forecaster name/number>
```

**Figure 17.** Generic format for Daily River and Lake Summaries (RVD).

15.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**16. Hydrometeorological Data Products (RRx).** These products contain precipitation and other hydrometeorological data from various networks, including the NWS Cooperative Network, flood warning systems, ASOS, and networks operated by partnering agencies.

16.1 Mission Connection. These products help the NWS meet its mission by contributing hydrometeorological observations to a national information database which can be used by other government agencies, the private sector, and the public to enhance the national economy.

16.2 Issuance Guidelines.

16.2.1 Creation Software. Create hydrometeorological data products using the WHFS or other applications as appropriate.

16.2.2 Issuance Criteria. Issue this product to disseminate hydrometeorological data.

16.2.3 Issuance Time. Issue hydrometeorological data products according to schedules developed with local users.

16.2.4 Valid Time. Not applicable - this product is a report of observed data.

16.3 Technical Description.

16.3.1 UGC Type. (Optional) County codes should be used (zone for Alaska).

16.3.2 MND Broadcast Instruction Line. Not applicable.

16.3.3 MND Product Type Line. Use the MND product type lines shown in table 1.

16.3.4 Content. Hydrometeorological data products will be formatted in SHEF and:

- a. Contain a WMO header;
- b. Contain an MND header block as shown in the generic format below, with the product name matching one of the MND product type lines listed in Table 1 (if produced at a WFO); and
- c. Include a headline statement introducing the product (if produced at a WFO).

WMO Heading	MND Product Type Line	Content
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR1xxx	HYDROMETEOROLOGICAL DATA REPORT #1	Local hydromet data, including observations from partner systems
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR2xxx	HYDROMETEOROLOGICAL DATA REPORT #2	Precipitation data
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR3xxx	HYDROMETEOROLOGICAL DATA REPORT #3	Data from cooperative observers
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR4xxx	HYDROMETEOROLOGICAL DATA REPORT #4	Cooperative observer special reports
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR5xxx	HYDROMETEOROLOGICAL DATA REPORT #5	Hourly hydrometeorological data (e.g., from flood warning system)
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR6xxx	HYDROMETEOROLOGICAL DATA REPORT #6	ASOS precip report, produced on exceedence of threshold rates
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR7xxx	HYDROMETEOROLOGICAL DATA REPORT #7	ASOS hourly precipitation report
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR8xxx	HYDROMETEOROLOGICAL DATA REPORT #8	Data provided by water resources agencies
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RR9xxx	HYDROMETEOROLOGICAL DATA REPORT #9	Local hydrometeorological data
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RRMxxx	MISCELLANEOUS HYDROLOGIC DATA REPORT	Local hydrometeorological data, SHEF or tabular format
SRA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) RRAxxx	AUTOMATED DATA REPORT	Automated river and rain gage data

**Table 1.** Header instructions for hydrometeorological data products.



16.3.5 Format. The generic format is shown in Figure 18 below:

```

SRA1A2ii cccc ddhhmm (BBB)
RRxxxx
stC001-005>015-ddhhmm- 1

<MND Product Type Line> 1
NATIONAL WEATHER SERVICE <WFO location> 1
hhmm am/pm time_zone mon dd yyyy 1

<...Headline statement...> 1

<Data summary, SHEF or tabular format>

$$ 1

```

Note (1): These items are optional.

**Figure 18.** Generic format for Hydrometeorological Data Products (RRx).

16.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**17. Hydrometeorological Data Summary Products (HYx).** These products provide daily, weekly, and monthly summaries of hydrometeorological observations.

17.1 Mission Connection. These products help the NWS meet its mission by providing quality-controlled observations to a national information database which can be used by other government agencies, the private sector, and the public to enhance the national economy.

17.2 Issuance Guidelines.

17.2.1 Creation Software. Create hydrometeorological data summary products using the WHFS or other applications as appropriate.

17.2.2 Issuance Criteria. Issue this product when daily, weekly, or monthly data has been compiled and reviewed.

17.2.3 Issuance Time. Issue daily, weekly, or monthly hydrometeorological summary products according to schedules developed with local users.

17.2.4 Valid Time. Not applicable - this product is a report of observed data.

17.3 Technical Description.

17.3.1 UGC Type. County codes should be used (Zone for Alaska).

17.3.2 MND Broadcast Instruction Line. Not applicable.

17.3.3 MND Product Type Line. Use the MND product type lines shown in table 2.

17.3.4 Content. Hydrometeorological data summary products will include a:

- a. WMO header;
- b. MND header block as shown in the generic format below, with the product name matching one of the MND product type lines listed in Table 2; and
- c. (optional) Headline statement introducing the product.

WMO Header	MND Product Type Line	Content
SXA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) HYDxxx	DAILY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled daily <sup>1</sup> hydrometeorological data
CWA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) HYWxxx	WEEKLY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled weekly hydrometeorological data
CSA <sub>1</sub> A <sub>2</sub> ii cccc ddhhmm (BBB) HYMxxx	MONTHLY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled monthly hydrometeorological data
Note (1): product not limited to strictly daily issuance - e.g., may be issued every other day.		

**Table 2.** Header instructions for hydrometeorological data summary products.

17.3.5 Format. The generic format for hydrologic data products is shown in Figure 19 below. Note: use the WMO headings shown in Table 2, i.e., TT=SX for daily products; TT=CW for weekly products; and TT=CS for monthly products.

```
TTA1A2ii cccc ddhhmm (BBB)
HYXxxx
stC001-005>015-ddhhmm-

<MND Product Type Line>
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<(optional)...Headline statement...>

<Data summary, SHEF or tabular format>

$$
```

**Figure 19.** Generic format for Hydrometeorological Data Summary Products (HYx).

17.4 Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

**18. Hydrometeorological Coordination Message (HCM).** Hydrometeorological coordination messages are produced by WFOs to communicate any type of internal forecast/support-oriented information to supporting RFCs, other WFOs, and the National Centers for Environmental Prediction (NCEP). This product is not distributed over NWS-supported public dissemination pathways or posted on the Internet, but may be made available through secured mechanisms to selected partners.

18.1 Mission Connection. The hydrometeorological coordination message helps the NWS meet its mission by providing RFC, WFO, and NCEP forecasters with a mechanism for communicating sensitive information on potential hydrometeorological activity before it is released to the public in the form of forecasts and warnings.

18.2 Issuance Guidelines.

18.2.1 Creation Software. Use appropriate text editor on AWIPS.

18.2.2 Issuance Time. The HCM is a non-scheduled, event-driven product.

18.3 Technical Description.

18.3.1 MND Product Type Line. Use: "HYDROMETEOROLOGICAL COORDINATION MESSAGE."

18.3.2 Content. Topics discussed in this product may include (but are not limited to): contingency planning for future hydrometeorological events, QPF verification information, hydrologic forecast verification information, and problems with gage or radar-based data.

18.3.3 Format. The generic format is shown in Figure 20 below:

```
AGA1A2ii Kccc ddhhmm (BBB)
HCMxxx

HYDROMETEOROLOGICAL COORDINATION MESSAGE
NWS <WFO name> <WFO location>
Time am/pm time_zone day mon dd yyyy

<Headline introducing the information to be presented below>

<Discussion>

$$
```

**Figure 20.** Generic format for Hydrometeorological Coordination Message (HCM).

18.4 Updates, Amendments, and Corrections. Not applicable.

**19. Advanced Hydrologic Prediction Service.** The hydrologic forecast information and observed data contained in products described in the previous sections, as well as additional output from WFO hydrometeorological systems, can be incorporated into graphical products and a forecast information database and made available through mechanisms such as the Internet. These WFO Advanced Hydrologic Prediction Service (AHPS) products and information sets provided through the Internet will conform to current NWS, NOAA, and DOC policies.